

# ITEMS OF INTEREST.

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## ORIGINAL COMMUNICATIONS.

### OUR PRESENT STATUS.\*

*T. B. Welch, M.D., Vineland, N. J.*

In the present status of the dental profession we have much to be proud of, some things to regret, and many things to hope for. We have certainly made great strides in general intelligence, in specific knowledge, and in scientific and chemical researches, and in skill, materials, and appliances.

The profession of law has made little progress for a hundred years; the preachers are not much better than those of fifty years ago; and have physicians made improvement commensurate with their age? Dentistry as a profession is hardly fifty years old, yet its increase in numbers, skill, and dignity is phenomenal. Within thirty years its stately steps, its honorable standing, and its notable distinction, give us respectability everywhere. In its young energy and laudable pride it is almost ready to lock arms with the aristocracy of "the leading profession." Really, if these learned gentlemen are not less empirical, and are not more specific in their prescriptions, and more broadly scientific and exact in knowledge, we shall even outstrip them in the race for the world's honors and confidence.

It is true, these medical men have the advantage of us, for "dead men tell no tales;" and even with patients that live, the evidences of fraud and incompetence are not easily proved. In view of the blunders and malpractice of the many, a venerable President of the London Medico-Chirurgical Society once declared, in his annual address, "I verily believe if all the doctors and surgeons, and midwives and druggists and drugs were hurled from the face of the earth, there would be less sickness and less mortality among the people." But if we dentists show incompetence, our patients live to curse us. Our poor work fairly grins at us from the victim's mouth. And even if our false, bony skeletons fall, so that we imagine we are rid of them, we soon find them, as

\* Read before the Georgia Dental Society.

evil specters, standing guard at our office door, crying to all comers, "Who dare enter here?"

It is not boasting to say that, in proportion to its age, no profession to-day stands higher in the skill of art, in the dignity of science, and in the vantage ground of discovery, than the dental profession.

Compared with the past, it has become a profession of esthetic gentlemen. There are a few who still drink whisky, but they are ashamed of themselves. There are a few who chew their cud, but they are fast passing away. It is even beginning to be considered ungentlemanly to smoke tobacco in a patient's face, though eternal gum "chawing" at the chair, as a prophylactic against stale tobacco stench, is almost as bad.

Society itself has so much advanced in refinement that, to satisfy our best and best-paying customers, we must be as clean and neat in our person, habits, and surroundings, and as pure and good in character, as the ladies we work for. If we have not already come up to this standard, the spirit of the age is calling us there, and giving special rewards to those who get there.

The necessity for high-grade work is equally apparent. Even that it is substantial and durable is not enough. It must be of artistic form, beautiful finish, and possess every point of skill and excellence.

And it must be put in by *deft* and *dainty* fingers. Unless we men look to our laurels, those *deft* and *dainty* fingers will be found on the pretty hands of our fair sisters, and we shall be relegated to the plow and the blacksmith shop.

Our best patients demand more than this. The dentist must be a scholar, cultured, learned, and well-informed in the world's affairs. Behind the instruments there must not only be a man of skill, but a well-rounded man of intelligence, talent and suavity. And what our best patrons demand, we must be; for they alone give good character and golden hue to our business.

He must also be a man of society—not a fop, a dude, a dandy, a mountebank—but a pattern of social ability and refinement, of politeness and gentility, of grace and manliness. Heretofore he has been considered too much a man "to hire," a menial, a grim, heartless personification of torture, to be avoided if possible. But now he appears with manners so gentle, with disposition so kind, and with manipulations so skilful, that his work is relieved of much of its sting; and that which must be painful is ameliorated by carefulness, sympathy, and medication. If he is what he may and should be, he is more a master than a servant, and instead of receiving the wages of ordinary work, he is paid as an expert.

Time is fast coming when a man who cannot fill such a sphere will have a poor place in the profession.

Our colleges are requiring of students greater learning and manipulative skill, and more cleanliness and refinement. They are clearing their halls of vulgar loafers, and of the slaves of tobacco and beer. Can we imagine a lady student of such a character? And why should we have a lower standard for the boys than for the girls?

It may be, after a long time, if we are good children, and learn better our "preliminary" lessons, that our venerable English brethren will put down their cudgels and let us land on their sacred shore—if we will agree not to take their sovereign away from them by doing better work than they can.

Our Examining Boards are becoming more and more stringent in their demands, and the whole profession is reaching toward greater attainments. We are all fast clearing away the brush, setting out beautiful trees, and improving our surroundings. The public appreciate our efforts and are building for us beautiful mansions, and welcoming us as their worthy co-workers. They are beginning to recognize us, not only as "a skilled profession" and "a learned profession," but as a profession of gentlemen and social benefactors, who, as much as physicians, are spending our lives in curing and preventing the ills to which humanity is heir, and assisting to a higher civilization and the development of a nobler manhood.

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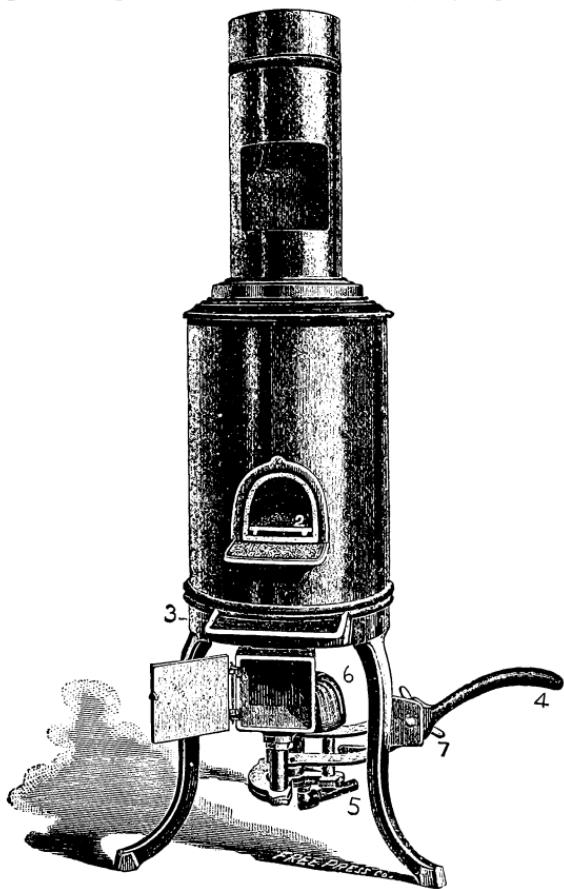
#### NEW OIL AND GAS FURNACE FOR CONTINUOUS GUM WORK, ETC.

*Dr. C. H. Land, Detroit.*

In previous articles on gas furnaces, published in the ITEMS OF INTEREST, in October, 1886, and July, 1891, one of the most important subjects considered was the liability of the products of combustion to penetrate the muffles and combine with the matter contained in bodies and enamels seriously injuring their color and texture. The fixed gas CO being the active element. At that time a furnace having two muffles, one within the other and space between, through which a counter blast of air was forced, proved to be an effectual means of overcoming the difficulty. But the facilities necessary to operate this furnace, so that the practitioner could work with comfort, required a motor and some kind of a blowing machine, shafting, pulleys, etc. All of this, of course, amounted to a considerable investment, and unsuitable to place

in a large number of offices. This, together with the fact that in many instances though gas fixtures might be present in various offices, and yet not available owing to diminished pressure, has been the strong incentive to devise a more simple form of furnace.

Recently my time has been devoted to developing a suitable furnace, to be operated by the ordinary draft of a chimney. Anticipating that this might be done and at the same time utilize either gas, gasoline or oil as fuel, I began a series of experiments, and have finally secured results that have gone far beyond my most sanguine expectations. The accompanying illustration will indicate



NEW OIL AND GAS FURNACE.

the general form of the new furnace. 6 represents the burner. 4, a lever or handle for raising or lowering the burner. 7, a thumb-screw for setting the burner in a fixed position, which exactly brings the amount of air and gas to the proper proportion of each, whereby perfect combustion is secured. The points of excellence are obtained by the exact regulation of fuel and air, and non-conduction above. The combustion is so perfect that no injurious gases are formed. The heat secured is equal to that of a

blast furnace, consequently porcelain may be fused in the most perfect manner. The same burner may be used whether gasoline, natural gas, illuminating gas, kerosene oil, or crude petroleum is used as fuel. The whole apparatus is remarkably simple and highly efficient, readily fusing the block teeth as made by any of the manufacturers, the color and texture of the porcelain is maintained.

## HOW TO MAKE LOWER PLATES SUCK.

*Dr. J. W. Greene.*

I am asked to be more specific than in a former article. Now then:

Get a perfect impression with the parts in their normal shape. This may take personal showing; it certainly takes considerable experience, and always the greatest care.

Make a model of uniform density, smooth and glossy on its surface, and so hard you can't drive a common brass pin into it. This takes the greatest care, but it can be done with experience and first rate plaster; and in difficult cases it is absolutely essential.

Flask with pressure so light as not to force the model out of shape. Vulcanize thoroughly at lowest temperature, and give your case from four to six hours to cool off slowly, that your plate may not warp from imperfect crystallization.

Trim the plate so its dull, well-rounded edges don't bear more on the side muscles than on covered parts, nor press too hard on them. Nothing in all dentistry requires better judgment, more experience or greater care than trimming a plate rightly. In lower plates see that your edges are blunt, well rounded from both sides, and smooth.

See that your articulation is perfect, the bicuspids and molars all "occluding" at the same time, under light pressure. Don't force an articulation by hard biting. The anterior teeth should hardly touch.

Those described sometime ago by Dr. Haskell, where the cheek muscles are higher than the alveolar rim, the lower plate should be of molded metal, made with the care essential in that kind of work.

Now, boys (I say boys, for the old dentists know all this, but won't tell it), if these instructions are perfectly carried out in detail, step by step, any lower plate will have some suction, and most of them will stick as well as upper plates of equal areal contact. But a failure in any step may, and in unfavorable cases will, spoil all.

All this requires capabilities and time that will bring you above competition in charges with the bunglers, and botchers, and cheap Johns, that constitute largely the profession in mechanical dentistry. (Excuse me from the words "prosthetic" and "denture.")

In such work you must take things thoughtfully, coolly, slowly and carefully—no "eight plates a day." One plate a day is enough for an old fogey like me; but when I'm done she can test her teeth with dried beef to her heart's content, before she pays for it.

## CLINIC REPORT OF THE FIRST DISTRICT DENTAL SOCIETY OF NEW YORK.

A clinic was held March 13th, under the direction of your committee, at Lyric Hall, No. 723 Sixth avenue, opposite Bryant Park, at which there were present five hundred and forty-two dentists of this and neighboring cities.

Dr. W. G. A. Bonwill, of Philadelphia, gave an exhibition in his own mouth of the practical application of his "method of clasped, sectional, realistic plates," to be used in nearly all cases instead of mutilating the teeth as by the ordinary plan of bridging. He exhibited many extreme cases of its application, and informed us that it had been in use for about six years.

Dr. Bonwill exhibited a new application of his dental engine-arm to the Elliott suspension, which obviates the use of any heavy weight on the hand-piece or the mechanical mallet, and makes them as light as a feather, giving more force, greater speed, with less power needed to drive it by one-half. For the mallet it is unusually adapted, as no oscillation at the point is observable.

Dr. C. M. Richmond, of New York, presented an upper case of portable or movable bridge-work in the mouth, which is retained by two molars. The case has been worn ten years, and the two teeth are as strong and gums as healthy as when the case was inserted. There is no drooping of the front part, and the case is used as if the teeth were natural. Dr. Richmond also gave some of the details of construction of movable bridge-work, stating that he no longer uses fixed bridges in cases of three or more teeth. He also presented some finished bridge cases and crowns, showing a simple and practical method of bridging. Dr. Richmond also presented a new hand-piece for the dental engine, which has many features to commend it.

Dr. S. C. G. Watkins, of Montclair, N. J., demonstrated his method of taking impressions for partial cases. At first an impression was taken in wax. Then, where the teeth were, it was cut away to make more room. A small quantity of wax was roped, heated till very soft, and left in hot water, so that it might remain perfectly soft till the plaster was mixed, and placed in the wax impression. Then, holding the little rope of wax around the straggling teeth with his fingers, he placed the plaster in the mouth and pressed it home firmly, holding it there till it was thoroughly hard; it was then removed from the mouth without tearing or breaking to pieces. The wax which was molded around the teeth gave sufficiently to allow of its easy removal.

The wax which had been pressed around the neck of the teeth had moved slightly out of place in drawing the impression. This was pressed back into place, and a perfect plaster impression of the roof of the mouth was obtained. The wax impression had carried the plaster into every part of the vault, thus leaving a perfect impression, without the strain on the straggling teeth which occurs in the removal of all-plaster impressions.

Dr. George Evans explained a simple method of forming all-gold bicuspid or molar dummies for bridge-work. A seamless gold crown of suitable size is first trimmed at the neck to the desired form; fluxed prepared solder filings are placed on the inside of the gold cap and melted, in considerable quantity. A piece of thin platinum, or gold plate, is then fitted over the orifice of the neck of the cap or crown, clamped thereto, and heated to a point sufficient to melt the solder in the interior of the cap, and enable it to flow down and unite the metal at the neck and flow over its surface. A hollow, hermetically tight gold dummy is thus formed, which can be used the same as a solid one, but is much lighter and less expensive. Dr. Evans also explained methods for applying and altering ready-made gold crowns.

Dr. A. S. Richmond's cable suspension dental engine for electric motors, which he exhibited in running order, consists in the arrangement of the bracket-crane fastened to the wall. The crane at about a foot distant from its anchorage is provided with a joint for an up-and-down position, and has also a slip extension to regulate the length of the crane as may be desired. At the end of the crane is an endwise joint and a steel rod slipping into a tube connecting with the motor-head, to which the cable-sheath and hand-piece are attached. The idle pulleys or crane-rods are adjustable to any desired position on the rod, and there fastened by thumb-screws. The engine-head case or barrel is about four inches in length and fourteen and one-half inches in diameter, with a balance-weight inclosed, which gives force and steady motion to the cable and hand-piece. There are two high and low motions, the right and left swinging of crane, and the rotary motion of hand-piece, and there is, therefore, no slackening of engine-cord, which is always taut from the weight of the engine-head, when once put into proper position. The entire construction is simple and compact. The electric motor used is the "Lundell," on a bracket attached to the wall.

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All the States and Territories now have dental laws except Alaska, Idaho, Indian Territory, Montana, Nevada and Utah.

## UNSCIENTIFIC EXPERIMENTS.

*Dr. C. H. Land, Detroit.*

Some operators have been placing vitrified substance, molded into spherical bodies, between a vice, one against the other, bringing sufficient force for one to fracture the other, the aim of the experimenter being to prove the greater strength of a lower fusing body over that of a higher. Such demonstrations, while they may have the appearance of fact, and convey to the casual observer results that are definite in a measure, yet leave so much untold as to utterly fall short of true and scientific demonstrations. They do not take into consideration the relative angles of one sphere differing from another; neither do they weigh the value of the different results brought about by fusing compounds known as glass at different temperatures, *i. e.*, the melting together of the same vitreous compounds at 1,800° F. would insure entirely different results when fused at 2,000° or over. Not only would a variation in strength be found, but also texture and color variably modified. A vitreous mass compounded to fuse at 1,800° into a homogeneous mass might readily break or fracture one that had been intended to require 2,800° F., this merely to cause it to adhere partially, and is known as a bisected porcelain. Yet if this same porcelain was submitted to a much higher degree of temperature than was intended for it, so that it became equally dense in texture, the low fusing mass would be the first to fracture, providing precisely the same angles were presented for each piece at the point of contact. However, when all this is proved, the question of great strength must not outweigh the other necessary qualities found only in a true porcelain, experience having proved it par excellence the proper substance to use as a means of substituting lost portions of teeth. One of the most important differences between that which is known as glass and pottery is in the nature of the latter to keep its exact form at the highest degrees of heat, while with the former expert operators find it exceedingly difficult to get but a proximation of an object, perfection being obtained only by means of molds applied while the mass is in a semi-molten condition. Porcelain differs widely from glass in its chemical composition, methods of molding, manufacturing, higher temperatures, and the maintaining of its colors during fusion. Therefore, the presumption that glass is equal to porcelain for any dental use is not well founded, nor is the crude demonstration of causing a ball of glass to fracture porcelain surfaces of varying angles, such as are found on artificial teeth, of any value to the profession, because no profound and systematic knowledge is revealed.

## THE INJURIOUS RESULTS OF WEARING RED RUBBER PLATES.

*A. A. Hazeltine, New Bedford, Mass.*

I think I can indorse partially, or perhaps wholly, what Dr. L. P. Haskell says, in his article in April ITEMS, in regard to absorption of the alveolar process from long wearing rubber plates, yet black rubber will perhaps cause as much absorption, as I regard the trouble as the result of rubber being a non-conductor. Yet I must say, that in a practice of over twenty-five years, I have failed to observe the constitutional effects he mentions, though I have seen patients who imagined, and the belief fostered by their physician, more particularly if a Homeopathic one, that they were being injuriously affected by poisonous rubber, when it was the kind that contained none; or if the kind, the trouble all came from simple mechanical irritation, easily remedied. There is nothing, however improbable, beyond the vivid imagination of some people, as witness the "yarns" people tell of what they experience for years afterward from inhaling gas or ether. And it may be remembered what the "all gold" operators used to say of the evil effects following having teeth filled with amalgam, such as salivation, necrosis of jaw, sores on the face or neck, worts and ingrowing toe nails! Homeopathic physicians talk such "rot" now about rubber plates and amalgam. And remember what used to be said of the fearful results from having gold and amalgam come in contact in a tooth. It may look like presumption to disagree with Prof. Haskell, yet the coloring that makes the red rubber, and what is used in celluloid plates, is not the same.

I can but smile at the credulity of the woman he cites as having her throat made sore by chewing gum made from dental rubber; no chewing gum is made from dental rubber. People easily believe things they like to believe.

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The Mississippi Dental Association has made a complete reorganization, so much so as to give up its old charter and organize under a new one, with its constitution and laws so remodeled as to require a new Act of the Legislature. This, of course, required the resignation of all its officers and of the State Board of Examiners.

Dr. W. E. Walker, son of Mrs. W. J. Walker, our reporter, was President of the old board, and is elected President of the new.

### AT THE WASHINGTON AND BALTIMORE JOINT CONVENTION.

Dr. David Genese, of Baltimore, Md., treated and excavated a lower first molar, capping and filling at the same time. The cavity was large and the tooth hypersensitive. Dr. Genese demonstrated the obtundent effect in this case of his preparation of carbolate of cocaine, the formula for which is:

R. Cocain.....	4 per cent.
Carb. acid.....	50 per cent.
Benzoin, gum.....	50 per cent.

By the aid of this he excavated the tooth painlessly. Then combining the obtundent with oxid of tin, forming a sticky paste, he capped over the nearly exposed pulp, and over this placed a layer of oxiphosphate, finishing the filling with a surface of amalgam. Dr. Genese also cut down a decayed second upper bicuspid, and, applying his obtundent, extracted the remnant of the pulp, sealed the apex of the root, and mounted a "Genese Crown." This form of crown has a platinum lining. The pin for anchorage is made of iridiumized platinum, rolled from plate into a cone, and milled so as to roughen the surface. The crown having been ground into position and the pin fitted fairly tight into the root-canal, a piece of wax is placed in the crown and pressed into place, so as to secure proper alignment. The crown and pin are then removed and invested, then soldered together with pure gold, or other soldering material, and then adjusted.

Dr. C. A. Meeker, of Newark, N. J., bleached, in the mouth of a patient brought by a physician, an upper bicuspid which presented a much darkened appearance. After first wiping out the cavity with carbonate of ammonia, to neutralize possible acidity, he used pyrozone, twenty-five per cent, on a swab of bibulous paper, evaporating it by repeated blasts from a hot-air blower.

Dr. C. C. Linton, of New York, exhibited a number of sealed glass tubes, prepared for the purpose of showing the contractility of amalgams according to Fletcher's test with an aniline solution in alcohol. From about two dozen specimens of amalgam thus subjected to test during a period ranging from three days to as many weeks, the alloys of Welch, Oliver, Harris, and that of R. S. Williams, showed no shrinkage.

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There is always room for the best. However, many poor workmen are about us if we are a good one. There is a rich satisfaction and ample compensation in being recognized as the best.

ATTENDANCE AT THE LAST SESSION OF OUR DENTAL COLLEGES AND DENTAL DEPARTMENTS OF UNIVERSITIES.

	No. of Session.	Matriculates.	Graduates.
Baltimore College of Dental Surgery.....	54	146	37
Ohio College of Dental Surgery.....	48	150	34
Pennsylvania College of Dental Surgery....	38	273	62
Philadelphia Dental College.....	31	299	77
New York College of Dentistry.....	28	294	62
Missouri Dental College.....	28	94	21
Indiana Dental College.....	15	104	23
Vanderbilt University.....	15	129	25
Kansas City Dental College.....	12	113	16
University of Iowa.....	12	148	31
Meharry University .....	8	10	3
Columbian University.....	7	28	8
University of Denver.....	6	18	3
Western Dental College.....	4	126	26
Cleveland University.....	3	.....	4
Cincinnati College of Dental Surgery.....	3	18	5
University of Buffalo.....	2	86	.....
Western Reserve.....	1	30	4
Atlanta Dental College.....	1	118	26
Royal College of Dental Surgery.....	.....	98	29
Northwestern University .....	.....	95	25
University of Maryland .....	.....	145	34
National University.....	.....	28	8
Birmingham Dental College.....	.....	27	3
Ohio Medical College.....	.....	23	2
American Dental College.....	.....	346	44

In the course of five years Dr. Sejournet saw 734 sick children, and among these 72 were cutting teeth. In 7 cases he believed a direct connection between the illness and the teething could be traced, but in these cases the disturbance was slight, consisting of restlessness and crying, evidently caused by the pain. Generally the gums were found to be red and swollen. Fever was present in none of these cases.

This further emphasizes the recent position that severe symptoms during dentition can almost invariably be found to be caused by other disturbances than the mere physiological eruption of the teeth.

## PROSTHETIC DENTISTRY.

*Dr. H. W. Allwine, North Platte, Neb.*

Too much college work is done loosely. Usually but one demonstrator is employed, and often he does not know how to properly handle his pupils. How many of us have seen whole laboratories full of "boys" depending on the "good fellows" for help? How many of us have been lured to some colleges because they falsely represented in their course a "specialist" in crown and bridge-work, or some other inviting feature?

Children learn most readily, and truths are more indelibly stamped on the mind, by seeing good models, seeing work done, and doing it themselves. Results in kindergartens prove this. Models are held before the children to be reproduced. Men are but children of a larger growth. The sculptor or painter works after the image formed by a creative imagination. Good work can be attained by any artisan only through a knowledge of what constitutes the truly artistic. He learns this by careful study of the works of master workmen, and by careful labor.

The work of our college laboratories should be conducted on these principles. Each pupil should have a place for work, facing the instructor, with models of the work in hand. Attention should be called to its various points, thus giving ideas of symmetry, harmony, and beauty, as well as of usefulness, and assistance should be given to bring them out. The result must be the practical work of each student, supplemented by the wise oversight of an experienced teacher, and the product of his labor must be shown up, scrutinized, and credit given for what is done.

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Dr. John C. M'Coy, of Santa Ana, Cal., says: For the past ten years my practice has been in a community that number among its citizens many persons of culture and refinement. Others whose exterior appointments of life are all that could be desired, and whose children are being trained in all the arts and sciences of the day, except that of cleanliness of the mouth. We have thousands of this last class. I have examined and worked for hundreds of them in the past ten years. The ignorance of the parents, and the neglect of the children, who know better, is one of the wonders of nineteenth century.

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Dr. Bonwill intends to make quite an extended stay in California, visiting all the principal points of interest.

## BLEACHING WITH PYROZONE.

At the recent joint meeting of the Maryland State and Washington City Dental Societies, Dr. C. A. Meeker, of Newark, N. J., successfully bleached a deeply discolored left superior central incisor in thirty minutes. His method, after carefully adjusting the rubber-dam, is to wipe out the prepared cavity with ammonia, this to neutralize possible acidity; then with a gold probe, armed with a swab of bibulous paper saturated with pyrozone, 25 per cent, he liberally moistens the interior of the cavity and exterior surface of the tooth, evaporating the solution by repeated blasts of cold air. This method is continued till the tooth shines out again in its original color. The doctor is highly elated over his success with pyrozone as a bleaching agent, and speaks encouragingly of the stability of its results.

D. E. Wiber, D.D.S., Nat. University, Washington, D.C.

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SUDDEN DEATH.—Mrs. Kate Ledbetter, daughter of Peter McCue, who lives near Oakford, Ill., recently died in Dr. Solenberger's dental office, while under the influence of an anesthetic, which, at her request, had been administered by Dr. Whitley, preparatory to having some teeth pulled. Coroner McAtee held an inquest, at which it appeared in evidence that the usual precautions had been taken, before and during the administration of the anesthetic, which Dr. Whitley stated was hydrobromic ethyl, used for short operations. The jury's verdict was that she came to her death by paralysis of the heart, and exonerated all parties from blame.

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Though we are little, we can do something useful. If we cannot distinguish ourselves by some great act, we can be a lens through which men may see a beautiful character, and the world needs beautiful characters more than it needs great deeds.

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Dr. J. E. Cravens has given so much attention to pyorrhœa that he has come to be quite an authority on this disease. He has just issued a treatise on its nature and cure that should be in every dental library. We suppose he calls it *Pyorrhœa Alveolaris*, because this is the popular name and not because it has much to do with the alveolaris, except as a disintegrator of the alveolus consequent on the disease. And, of course, he must use the "œ" to show that he belongs to the old spelling class and not to the new.

## CURRENT THOUGHTS.

### THE CONDITIONS WHICH MAKE A SUCCESSFUL PRACTITIONER.

*Charles S. Tomes, F. R. S.*

(Abstract of an Inaugural Address.)

I should like to say a few words on the training beyond the ordinary routine of dental education. For there is a danger lest, led away by the pride of manipulative dexterity, we underrate directions of study which, to the thoughtless, seem to have little practical outcome.

We have all seen the self-styled practical man, from the artisan who poisons us with sewer gas, to the politician whose horizon is bounded by the limits of his personal observation, and that none too accurately. Let me quote to you the words of one of the clearest thinkers of our day, Professor Huxley, who thus delivered himself on the proper scope of education :

"I often wished this phrase, applied science, had never been invented, for it suggests that there is a sort of scientific knowledge of direct practical use, which can be studied apart from another sort of scientific knowledge, which is of no practical utility, and which is termed pure science. But there is no greater fallacy than this. What people call applied science is nothing but the application of pure science to particular classes of problems. It consists of deductions from those general principles, established by reasoning and observation, which constitute pure science. No one can safely make these deductions till he has a firm grasp of the principles, and he can obtain that grasp only by personal experience of the operations of observation and of reasoning on which they are founded. Most all the processes employed in the arts and the manufactures fall within the range either of physics or of chemistry. To improve them, one must thoroughly understand them; and no one has a chance of really understanding them unless he has obtained that mastery of principles and that habit of dealing with facts which is given by long-continued and well-directed purely scientific training in the laboratory."

We are far behind such an ideal as is here propounded. That scientific habit of mind by which we observe correctly and draw conclusions legitimately is essential, but it is fortunately one which can, to a great extent at all events, be cultivated. But this wider mental culture must not take the place of that patient acquisition

of manipulative, and I may say, empirical skill. To once more quote Professor Huxley:

"Indeed I am so narrow-minded myself that if I had to choose between two physicians, one who did not know whether a whale is a fish or not, and could not tell gentian from ginger, but did understand the application of the institutes of medicine to his art, while the other, like Tallyrand's doctor, 'knew a little of every thing, even a little physic,' with all my love for breadth of culture, I should assuredly consult the latter."

But in real life we are not called on to make this choice, the man who is greedy of learning in his own special line is rarely content to be ill-informed outside it. But supposing our young aspirant to start fully equipped with such knowledge as the schools can give him, his success is not yet assured, and there are some qualities which will serve him in good stead. He must have nerve; not perhaps the nerve of the surgeon in whose hands lie the issues of life and death, but a steadiness of nerve which will enable him in the face of his special difficulties to be fully master of the skill which he possesses, and this will go far toward securing the confidence of the patients. He must be painstaking, for it is inattention to *minutiae* that, just as in modern surgery, the difference between success and failure lies; he must be patient, too, in dealing with all the little obstacles which crop up. And he must have tact and a quick judgment of the idiosyncrasies of his patient, which he must be both quick to appreciate, and, within proper limits, to bend to. For the very nature of our work precludes the possibility of the patient being able to judge even of results, except by the test of time, far less of what is best to be done for him, so that the dentist has ample opportunity for the exercise of all his discretion in knowing when to give way to his patient, and when to fight out his little battle in the patient's own interest. It is very desirable that he should cultivate a thoroughly kind and tender feeling toward those who honor him with their confidence—I say cultivate, because I believe that such a habit is strengthened by use, and that it is just as easy to entertain a friendly feeling toward those to whom we are able to render service, as it lies deep down in imperfect human nature to dislike those whom we have in any way injured. He must have a good physique, his work is hour after hour exhausting in a degree that no one who has not tried it can appreciate. With busy practice comes another difficulty, and that is to avoid being hurried, and to keep for each patient time enough to do him justice. There is no temptation for the busy dentist to spend one moment more than is absolutely necessary over his work; on the contrary, there is a strong temptation in the other direction, as

it becomes very difficult to satisfy all those who wish to be seen, and who do not realize that dental operations take so long that it is rarely possible for the dentist, as it may be for the medical man, to squeeze in another patient when his appointment book is full. So that much moral firmness is needed every day to keep the dentist out of this pitfall. He has all the more need of these qualities, for his patient can never know the extent of the difficulties of his work—difficulties that are great enough though the work be small—and will often be inclined to rate as high, or higher, the practitioner who attempts nothing difficult, but pilots their teeth toward a gradual and painless euthanasia, as he who renders far more real service, but in attempting much more now and again fails in something that the other would never have attempted.

It may be said these qualities would have led to success in any calling; so I believe they would, and I fancy it is generally true that the man who scores a real success in any calling would have done so in a good many others had his career been a different one. By success I do not mean merely pecuniary success. I do not call it real success unless a man stands in the opinion of his own professional brethren at least as high, or higher, than he does with the public. It is unfortunate that in all branches of the medical profession, and especially in ours, the ear of the public is sometimes to be caught by self-assertion, and the many hydra-headed forms of quackery. It is sometimes asked why, when the manufacturer or the dealer advertises his goods without exciting the smallest adverse comment, should it be considered disgraceful for a barrister, a stock-broker, or a medical man to advertise himself. The difference is not far to seek, though it is often overlooked. The one advertises an article which he wishes to make known to the public, and it is greatly to their convenience that he should do so; the one extols a thing, the other extols a man—himself. And there is this further difference—the thing may be new, all that is said about it may be true, but this can hardly be the case with the personal advertisement. For all knowledge that is of importance in a professional sense is very soon public property, for each to make use of as his abilities serve; but it would hardly have the effect he desires were the advertiser to say "I am even as other men are;" he must brag in some form or it would be no good, and when he brags he can hardly be truthful.

Let us turn from this disagreeable subject to a consideration of the reaction on the man himself, of success in practice. Wealth he can hardly attain—the limit of time precludes it; and the great income of a surgeon or physician in the front rank is impossible. But ease and comfort and modern savings are within the reach of

many. He will have but little leisure ; the large expenditure of time on his operations to do them properly, not merely sets a limit on what he can do, but the number of hours during which a man can do such work without exhaustion being soon reached, he has none too much energy for other things. One day's work very closely resembles the next, and the next, and though I would not be understood to say that there is not more of variety, and more scope for the exercise of sound judgment than any outsider might suppose, nevertheless, it is all exercised on a strictly limited class of subjects, and so has its special mental dangers. The dentist in large practice may be compared to a man who daily journeys along a deep lane, shut in with hedgerows on either side. In such a lane there will be much for him who has eyes to see it, more perhaps, than in a lifetime he can possibly exhaust, if he observes its geology, its fauna and flora, and the phenomena of human life and its ways that unfold themselves there ; but for all that, our wayfarer will never understand even his little world if he never looks outside it. I came across a passage in one of Stevenson's novels the other day which illustrates what I mean : "The dull man is made, not by the nature, but by the degree of his immersion in a single business. And all the more if that be sedentary, uneventful, and ingloriously safe. More than one-half of him will then remain unexercised and undeveloped ; the rest will be distended and deformed by over-nutrition, over-cerebration and the heat of rooms." And, inasmuch as it is easy to see the mote in our brother's eye, I often fancy that I can trace the narrowing and cramping effect of our necessarily limited horizons, which prevents our even seeing what is really well within their limits. There are countless problems lying before us; the etiology of the diseases we have to treat, problems of heredity laid out before us ; a rich and varied field for observation, yet how many cultivate it, even making due allowance for the fatigues of our routine work. By all means, then, let the dentist who would keep his mind fresh cultivate a hobby. A hobby is more restful than idleness and is a joy for ever, if it be well chosen. I recollect being struck with the sadness of the end of the life of one of the greatest physicians of recent days, who had no hobbies. He broke down in health, so that he could not practice, and then time hung heavy, even on the hands of a bright intellect, because, with failing health and declining years, it was too late to take up a fresh pursuit. And as a contrast, the end of the life of a great surgeon, who, when he retired from practice, eagerly turned to the pursuit of art, which he had cultivated with a great measure of success throughout a long and busy life. I think I can trace the same cramping effect in our relations to outside matters.

### HISTORY OF A LARGE SUN SPOT.

Prof. Larkin, of the Knox College Observatory at Galesburg, Ill., who has made a special study of sun spots, said in an interview on Friday last that the present sun spot is the largest on record, as well as the most turbulent. He estimated the area of the solar disturbance at 3,400,000,000 square miles.

"The spot was first seen at this observatory late in the afternoon of May 10th, and was already somewhat advanced on the eastern limb," said Prof. Larkin. "It gave no sign of coming magnificence, so was not specially noted or measured. It then consisted of one large spot with perhaps half a dozen smaller ones near it, and at quite a distance was seen another nearly half as large, also having several smaller points in its vicinity.

"By reason of clouds no view was had the 11th, and none till 2 p. m. on the 12th. The first had grown to possibly twice its former size, and its attendant spots had shifted positions and increased in magnitude. The second spot was larger, and its outlying spots had increased in number and size. Still the groups failed to attract attention as being more than ordinary, and were not seen again till the afternoon of the 14th. Both groups were larger, all the spots occupied different positions, and indications that 'bridges' were to form were noted. No time was had for closer study on account of clouds, and they were not observed again till the 16th at 9.30 A. M.

"Both groups, including penumbra, are as follows: Length, 84,000 miles; width of the first group, 43,000 miles; width between groups, 21,000 miles; width of the second group, 22,000 miles.

"This area included thirty-six spots, large and small. The largest spot in the first group was counted as three, since it had two bridges across it. These bridges, jets or tongues, as one pleases to call them, were extending across most of the black chasms below, while others were in process of formation. When a bridge begins forming a jet darts out of the upper edge of the penumbra and gradually works its way along till the end appears over the nucleus. Soon another is seen issuing from the opposite side, they advance, meet and form a band, which then widens and submerges the spot. At times as many as four bridges are seen; they are white hot, and are made up of the general photospheric matter of the sun. In the turbulent mass of May 16th and 17th these bridges were not straight, all were bent when completed, and before the tongues were extended entirely across they were in two or three instances divided into smaller tongues, and these again into

filaments or pointed streamers perhaps 100 miles wide, and none straight, a circumstance which leads to the conclusion that they were in the clutch of a rotary force.

"The divisions in the advancing ends of the jets, together with their curvature and silvery color, all conspired to present a beautiful spectacle, and impressive when one realizes the magnitudes of the moving masses and the heat involved in the incandescent sea. At times the filaments looked like spray, and one abyss was crossed by a bridge entirely made up of filaments or strips—that is, the texture was such that some of the blackness below could be seen through it.

"To those who are not accustomed to view the sun with a telescope it is doubtless well to say that those movements cannot be seen any more than can the motion of the hour hand of a clock, but at intervals of a half hour during the 16th and 17th even a careless observer could see that all had made displacement. Rapid motions of jets across spots are recorded—that is, when velocity is so great that the shifting can be followed, but they are rare. True, the velocity is great at all times, for on the 16th a bridge formed across a spot 14,000 miles wide, in three hours, but this speed cannot be seen at a distance of 93,000,000 miles.

"The raging storm was surely approaching a maximum when the mighty disk sank beyond range of the glass on the evening of the 16th. All during the afternoon minute black spots from one-fourth to one-half the size of the earth kept appearing in the 21,000 mile belt between the groups. In fact, nine developed from noon and night, and these were thought to be harbingers of turbulence, upheaval and unrest below. When night came it was thought the division between the groups would disrupt before morning.

"The rising sun of May 17th, was obscured by clouds and its face was hidden till ten o'clock. Then the telescope was turned on, when it was found the band was torn and tossed by spots with bridges, and these were twisted, distorted and torn. The edges of the spots were ragged, serrated, and had either sliding or rolling incandescent matter hanging over their brinks.

"Prof. C. A. Young, says: 'The spots are unquestionably cavities or depressions in the photosphere filled with gases and vapor which are cooler than the surrounding portions. The fact that they are cavities is shown by the change in the appearance of a spot as it approached the edge of the disk.' This remark of Prof. Young is corroborated by these observations, for exactly at noon on the 17th a large spot appeared on the eastern limb, and we distinctly saw the depression. It was shallow, however, and it is doubtful if spots are more than 3,000 miles deep.

"So great was the change in the storm during the night that it had little resemblance to the area in upheaval on the 16th. A row of spots now united the groups and penumbra extended over half the space formerly occupied by photosphere. The seething furnace was in the shape of a rude dumb-bell. Measurements were again made and the length was still 84,000 miles, while the second group had become wider. Computing the area of the perturbed region it was found that seventy worlds like the earth could fall in side by side without crowding.

"During all this time another group not far away consisting of several spots had remained quiescent, but by noon of the 17th they began the projection of cantalevers in the regular way. Nearly every nucleus seemed inclined to turn, or rather the buzz saw edges had desire to rotate, and nothing could long remain without a kink or crook. The whole area is in an excessive state of turbulence, the most striking fact being that the billowy photospheric matter is at places torn into separate masses, shreds, filaments, and ribbons. A detached mass at one time was seen to be suspended over a spot. No connecting link could be seen.

"Innumerable questions are being asked concerning the effect of the outburst on the earth. In Galesburg the heat has been abnormally high for several days and the belief is almost general that the spot caused it. But this has never been proven. It is still a question, and that eminent astronomer, C. A. Young, says of the effect of the heat on the earth: 'As to the temperature it is still uncertain whether it is higher or lower at the time of a spot maximum. The spots themselves are cooler than the general surface of the photosphere, but their extent is never sufficient to reduce the amount of heat radiated from the sun by as much as the one-thousandth part.'

"On the other hand, when the spots are most numerous the general disturbed condition of photosphere would, as Langley has shown, necessarily be accompanied by an increased radiation. Thus one effect balances the other, and the earth neither receives more nor less heat. But one effect of the sun spots has been demonstrated, and again Young says: 'One influence of the sun spots on the earth is perfectly demonstrated. When the spots are numerous magnetic disturbances (the so-called magnetic storms) are most numerous and violent on the earth.'"

*New York Sun.*

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For the business man to lose the charm of poetry and the cheer of song, is for the bird to lose his wings. Ah, he soon turns to a beast of burden.

## EPILEPSY AND THE TEETH.

*Dr. L. E. Hess.*

To demonstrate the importance of dental science in connection with the practice of medicine, I would call your attention to the following interesting and remarkable case:

It frequently occurs that systemic diseases which have long baffled the skill of physicians have been greatly benefited, if not entirely cured, on application of dental treatment.

The case to which I refer is that of Miss Bessie C., of Baltimore.

Only a brief history of the case could be obtained, on account of the unintelligence of the patient. She had suffered two and one-half years from epilepsy, having attacks at times as frequent in number as six a day, and rarely less than as many per week. There was, however, no history of heredity or of syphilis. The girl had been treated by prominent physicians, who, it appears, could do little more than afford temporary relief, the attacks invariably recurring after treatment.

The girl was dull, dejected, and greatly depressed. Fortunately she was now placed under treatment of a physician who, in diagnosing her case, discovered that her most prominent symptom was indigestion, as prior to an attack she always had intense pain in her stomach. On treatment for indigestion, the case was again somewhat improved; there were no attacks during the treatment, but they returned soon afterward.

The latter physician, a friend of mine, in relating the case to me, said that if he could cure the indigestion he could no doubt cure the epilepsy.

I inquired for the cause of the indigestion, and at once suggested that an examination of the teeth be made, as diseased teeth greatly favor imperfect mastication and consequent indigestion.

On examination, a few days later, I found the teeth to be in such a condition that when the girl made an attempt to masticate her food, the pain caused was so intense that she was forced to swallow her food without its being chewed, thereby giving to the stomach work which is intended for the mouth. At this time I extracted four teeth, two having the pulps exposed, and two being abscessed. Three days later I extracted two more having diseased roots, and subsequently inserted fifteen fillings and four artificial teeth.

During this operation, and up to the present, which is now four months, there has been no sign of an epileptic attack. The patient has given up use of medicine, is now gaining in weight,

has a good, healthy color, is brighter, more cheerful, enjoys life, and is wonderfully benefited in every way. This shows the importance of dental in connection with medical treatment. I hope the day is not far off when it will be as common a question among physicians to "let me see your teeth" as it now is to "let me see your tongue."

*Cosmos.*

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### HOT WATER FOR HEMORRHAGE.

Dr. Julius Scheff, Jr., of Vienna, according to the current number of *Ash's Quarterly Circular*, recommends strongly the use of hot water for arresting hemorrhage after tooth extraction. "We are accustomed," he writes, "to stop hemorrhage by the method that has been used for generations, viz., by the direct application of cold water to the wound. Practitioners started with the idea that heat caused expansion of and induced increased bleeding from the vessels; but on the other hand, cold caused contraction. In an ordinary case of extraction, hemorrhage from the arteria dentalis, or from the gums and periosteum, soon ceases; but it frequently happens, even when the patient does not suffer from hematophilia, that there is difficulty in arresting the flow of blood." Dr. Scheff mentions three cases occurring in his practice, in each of which there is a history of profuse hemorrhage after extraction. "I allowed one patient," he says, "to take a great quantity of cold water, and yet there appeared not the slightest diminution in the bleeding. I then took a glass syringe and continuously applied hot water, in drops, to the wound, from which the blood previously trickled without cessation. After a few seconds the bleeding diminished, a coagulum was formed, and the bleeding finally ceased. With the second patient I used hot water at once, and the flow of blood was arrested. In the third case the wound had been bleeding for a long time. I plugged the alveolus with iodoform gauze, and on removing the plug the wound bled afresh. I then employed hot water; the hemorrhage ceased and did not recur." Dr. Scheff applies the hot water by means of a syringe, injecting it by drops into the socket of the tooth. The arrest of hemorrhage in surgical operations by the application of heat is a recognized resource, and it would therefore seem that this principle might with advantage be applied in cases of tooth extraction, especially as the mouth is able to bear a very high temperature without inconvenience. In fact, water so hot that it causes pain when the finger is inserted in it will in many cases be tolerated in the mouth.

*Lancet.*

## AS YOU FREELY RECEIVE, FREELY GIVE.

One of the chief characteristics of the readers of this journal is that they fraternally exchange with one another the useful ideas they acquire from their experience and research. This is a practice which results in mutual advantage, and also in great benefit to humanity represented by their patients. We have to record a notable exception in the person of one who recently wrote us that he had found a successful treatment of a certain disease, but that he would not give it to the profession nor to the public—he was not going to give away the results of his study.

In response to this we would ask the doctor where his medical knowledge came from. Is he not indebted to the profession at large for the accumulated knowledge of many generations of medical investigators who studied, experimented, observed, recorded and published their observations for the benefit of others? If the doctor had been left solely to his own investigations for information could he, even in a long life time, have learned the anatomy of the human system, the details of physiological processes, the pathology of the various diseased conditions, the action of the many articles that have been tried as drugs and been either retained as valuable or rejected as worthless? Could he, unaided, ever have mastered a single disease or the virtues of a single drug? Men of eminent learning have devoted the concentrated effort of a life-time to the accomplishment of one of these objects, and at the last have been compelled to hand the work over to their successors to take up where they have left off. How, then, can this doctor say that he has learned his alleged method of curing a certain disease.

*Medical World.*

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Dr. W. H. Marshall says: The general idea of the evolution of man is revolting to me. Some of the strongest supporters of Charles Darwin have now given it up, and admit that in man, at least, there must have been a distinct and separate creation. All the specimens exhibited are simply anomalies. I can see no indication of a reversion to a primitive type, though to the evolutionist there seems to be; he may be looking through prejudiced eyes. I have seen many surgical diseases caused by an impacted third molar. In one case of trismus I have removed a third molar from a cyst and found five irregular, anomalous teeth beneath it. Were these teeth reversions? I think they are mere anomalies; the epithelium of the enamel-cord, after it is cut off from the enamel-organ, breaks up into tiny globules, and these are finally

absorbed; but if, for any reason, they are not absorbed and come in contact with the dermal layer of the mucous membrane, anomalous teeth are developed as a result. This is the way he accounted for such formations.

Dr. Beach believed that anomalies called supernumerary teeth were all departures from nature; we cannot account for them. He did not believe in evolution, and did believe that man was a separate creation. We do not appreciate the possibilities of change by national transition; various reasons have been assigned for anomalies, the mental influence of the mother on the development of the fetus, for example; that is a subject he had investigated, and did not think its importance, or the influence of maternal control, has been sufficiently recognized.

*Cosmos.*

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### SODIUM PEROXID SOLUTION.

The successful use of sodium peroxid as a bleaching and sterilizing agent depends on the care exercised in making the solution of it. If the solution be made hurriedly by the addition of considerable quantities of the powder to the water at one time, the evolution of heat, due to the energy which attends the combination, produces a rapid elevation of the temperature of the solution. This causes a decomposition of the peroxid, a loss of its loosely combined extra atom of oxygen occurs, and the resulting solution is little more than a solution of sodium hydrate or ordinary caustic soda, which is practically inert as far as bleaching power is concerned. To obviate the rise of temperature and consequent decomposition of the peroxid, the solution must be made slowly, and the vessel in which it is made should be surrounded by ice-water or some cooling mixture; or the solution can be made by gradually dropping the powder on the surface of a piece of ice about the size of a chestnut, contained in a small breaker of about one-ounce capacity. Dr. F. T. Van Woert, who has had an extended and satisfactory experience with sodium peroxid as a bleaching and sterilizing agent, kindly furnishes, for the benefit of *Cosmos* readers, the following detailed account of his method of preparing the solution:

"To THE EDITOR OF THE DENTAL COSMOS.

"Sir.—I find, after many experiments, that the most satisfactory solution of sodium peroxid is obtained in the following manner: Take a common tumbler about half full of distilled water, place it in the center of a good-sized pudding-dish, and pour all the cold water around it possible, without floating the glass. Add the sodium peroxid in very small portions

—about what could be taken on the point of the large blade of a pocket-knife—dusting it into the water slowly to cause as little agitation as possible, and this amount should not be added oftener than once in a half-hour, being careful to have the sodium peroxid finely powdered. This to be continued till the preparation begins to look opaque as powder is added. Let it stand over night, and it is then ready for use. If a lump about the size of a small bean is dropped into water, you will notice on the margin of the line of agitation a ring of color resembling iodin. A solution made in this way has always proven useless to me. If the peroxid is put in the water as I have suggested, there will be very little surface agitation, and none of the discoloration, the result of which is a solution that has never failed. This takes several days to make, but it will more than pay for the time consumed, in its prompt action as a bleacher and sterilizer. I have placed this solution in the hands of a number of gentlemen, to be used in the treatment of abscessed roots, and to the writing of this not a single failure has been reported. The general impression is that sodium peroxid is for bleaching only, while it is the most valuable preparation ever found for the treatment of dead teeth, if used in the following manner: Cleanse the root-canals of such septic matter as possible to get at with instruments, and dry them with hot air; then carry small ropes of cotton, saturated with a full-strength solution, as near the foramen as you can, using orange-wood shaped like fine probes, and cover with a temporary stopping, letting the whole remain for two days, after which wash with hot water, and fill in the usual manner."

F. T. Van Woert.

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#### A PRACTICAL METHOD OF SOLDERING ALUMINUM.

*Naaman H. Keyser, D.D.S., Germantown, Pa.*

After numerous experiments with various suggested solders and fluxes, I am impressed that the real trouble in soldering aluminum is due to a film, probably an oxid, that quickly forms on the surface, and prevents contact and union of the metals. If this film is removed or broken up while the solder in a molten state is in contact with the aluminum, there seems to be no difficulty in obtaining perfect union. The conditions, though differing in degree, seem to be precisely the same in kind as when using the tin-alloy solders on iron: there must be presented to the solder a perfectly clean metallic surface at the moment that the molten solder is applied, to secure union. With iron and many other metals this may be secured by chemical means, and preserved a sufficient time by means of various fluxes. With aluminum the same procedure fails, seemingly because all the fluxes heretofore suggested fail to maintain for a sufficient time the indispensably clean metallic surface. I find, however, that if the aluminum is heated sufficiently to keep in a molten state the tin or tin-alloy used as a solder, and then, with a suitable tool, its surface immediately

under the molten solder scraped so as to remove or break up this resisting film, union immediately takes place without the use of any flux. By this means the surface of the aluminum can be, to use a technical expression, "tinned," and the surfaces thus prepared, readily united by soldering. I find no difficulty in thus soldering aluminum to itself or to other previously tinned metals. In the choice of alloys for solder there seems to be a wide latitude. Pure tin may be used; indeed, any alloy fusing at a less heat than aluminum, of which tin is a component, seems to give satisfactory results. Those melting at a low heat may be manipulated by the soldering-iron, while the blow-pipe or its equivalent is required for those fusing at a higher temperature. An alloy of tin 50, silver 25, and aluminum 25, melts at about 750°. This makes a strong solder, and promises satisfactory results for dental purposes.

Mr. Joseph Richards, of Philadelphia, has invented and patented a solder for aluminum that is claimed to have proved a commercial success. He recognizes the quickly-formed film of oxid as the cause of former failures, and overcomes the difficulty by incorporating with his solder a deoxidizing agent that, by reducing the oxid at the moment the solder is fused, causes the aluminum to present to the solder a clean metallic surface. The agent used is phosphorus. This solder works nicely. The solder and process are patented, the claim, dated October 5th 1891, being as follows:

"U. S. PATENT No. 478,238, JULY, 1892.

"Claim. As a solder for aluminum.—An alloy of aluminum and zinc having incorporated therein a reducing reagent whose affinity for oxygen is greater than that of aluminum under the condition of use, and whose oxid is substantially non-film-forming.

"Second. A solder for aluminum.—An alloy of aluminum, zinc, and phosphor tin, substantially as set forth."

Arsenicum, I find, seems to have the same effect. Mr. Richard's solder, and also that which I have made having arsenicum as a component, fuses at a low temperature, and is, perhaps, at its best when used with the soldering-iron. The alloys of tin and aluminum used as solders do not seem to be definite compounds, for when heat is applied the tin exudes in globules, much in the same way that mercury does when heat is applied to a pellet of copper amalgam. This tin which exudes spreads over and forms a coating on the surface of the aluminum, over which, as the heat is increased, the less fusible constituents of the solder flow.

I have made practical use of this method of soldering aluminum in constructing a rubber attachment case, using the formula given, tin, silver, and aluminum for soldering staples and a rim to a swaged aluminum plate, with satisfactory results. By the use of staples soldered on, a strong attachment is secured, avoiding that

breaking up of the continuity of the palatal surface of the plate necessarily following holes punched through the ridge.

In soldering aluminum, it is difficult to make the solder flow into and fill up a narrow space such as is formed between the lower edge of a backing and the plate. This may readily be overcome by beveling the lower edge of the backing, leaving the extreme beveled edge of that surface of the backing next the tooth to form the line of contact with the plate. This forms an open V-shaped space or gutter, into which the solder (preferably an alloy fusing at a low heat) can readily be applied, and a stronger union secured. When soldering clasps of other metal than aluminum to an aluminum plate, a tongue of the same metal as the clasp should first, with solder appropriate to the metal used, be securely united to it. This tongue should be neatly fitted to rest on the plate. After it is soldered to the clasp, and the clasp and tongue properly adjusted, the under surface of the tongue should be "tinned," and coated with some little thickness of solder, the surface of the plate where the tongue is to be soldered being likewise "tinned," or coated with the aluminum alloy selected as a solder. The plate and clasp are now adjusted in proper position on the plaster cast, and, while they are pressed firmly together, heat is applied by means of a pointed blow-pipe flame till the solder fuses. By this means they can be firmly united. If the operation is skilfully performed, the heat is not sufficient to materially injure the plaster cast. It must be borne in mind that aluminum solders are practically "soft" solders; they have nothing like the strength of silver or gold solders, and to make a strong joint there must be considerable surface in contact. It is on this account that I recommend first soldering a tongue to the clasps with hard solder. When aluminum is soldered to itself, we may at times with advantage use a high-grade solder—that is, a solder containing a larger proportion of aluminum and having a high fusing point; but where gold, silver, or platinum are to be soldered, we are, on account of the strong affinity which aluminum has for these metals at a high temperature, restricted to a solder having a low fusing point.

*Cosmos.*

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Immediate root-filling, when there is a fistula, or when absolute dryness can be obtained at the apex, is always the most satisfactory method, in a country practice, for treating pulpless teeth. There is a gain of time in this way, and an enlarged possibility for saving teeth for people who are prevented more than one visit to the dentist; that means a large addition to one's revenue.

*Dr. Bergstresser.*

## HEADACHE FROM EYE-STRAIN.

*Dr. C. F. Stacy, Boston.*

I cannot agree with Lauder Brunton, who declares that the most common causes of headache are decayed teeth and irregularities of vision. But I recognize the fact that the proper treatment of decayed teeth may be the only relief in some cases of headache, whereas defects in vision are the direct cause in a very great number.

It is not to be wondered at that the statement of one writer, that all migraine was due to eye-strain, was received with decided opposition by careful observers; but during the last few years, by the combined efforts of oculists and neurologists, eye-strain has come to the front as a most important factor in this troublesome affection.

In Pepper's "System of Medicine," the article on Cephalalgia, or Headache, by Wharton Sinkler, under Sympathetic Headache, reads, "The headache from eye strain may be considered in this connection, and deserves careful consideration. Many people have suffered from headache for years from this cause without its being suspected."

Weir Mitchell, in 1876, brought prominently to notice the frequency with which headache may be caused by defects of vision, and later, in 1891, he again called attention to this important subject in a very able paper.

Previous to this the general practitioner seldom recognized eye-strain as a cause of headache. It is now becoming a very common occurrence for the family doctor to refer cases of persistent headache, where the cause seems obscure, to the oculist, for examination of the refraction of the eye; and out of such cases I do not think I overstate it in saying that seventy-five per cent or more are entirely, or to a very great extent, relieved from headache.

One of the most important facts in consideration of ocular headache is the pain. It has all degrees of severity; it may be constant, or interrupted; it may be associated with the use of the eyes in reading, writing, or sewing, or any near work; also, from attending church, theatre, or concert, or from excessive mental or manual labor. The regions most frequently complained of are frontal, occipital, post-ocular, parietal, throughout the head, and in exceptional cases in the neck, arms, and shoulders.

Bright light, noises, locomotion, worry, or any mental strain, odors (as tobacco), usually increase the suffering. The most comfortable condition for the patient seems lying down in a darkened room with cooling lotions on the head, and perfect mental inactivity.

But the best and most effective treatment for permanent relief is correction of the eye-strain by proper glasses.

Ocular headaches are very often not associated with poor sight. It is the rule that small errors of refraction, where the sight is exceptionally good, are often the cause of most troublesome symptoms; whereas the refractive error may be very large and the sight very poor, yet the symptoms may not be at all annoying. Thus it is not to be supposed that people whose eyesight is perfect, as far as they can judge, will be easily prevailed on to adopt glasses as a curative measure in cases of headache.

Another fact must be mentioned: the eye-strain may remain latent for years and cause no troublesome symptoms, when by sickness or poor health, or an increased sensitiveness of the brain, either from mental or moral causes, it may make itself suddenly apparent.

The primary defects of the eye that cause derangements elsewhere are essentially functional in origin and result. They are principally errors of refraction and accommodation, classed under the name of ametropia, or defective sight, and include astigmatism, or difference in one eye from the other; hyperopia, or far-sightedness; myopia, or near-sightedness, separately or in combination.

The results of these defects are called eye-strain.

J. J. Chisholm considers that astigmatism is a very common cause of headache, though the class of persons in which it occurs are healthy people,—young, active, and industrious. They all suffer variably with eye-pain and headache, which they call neuralgia,—a term that they have learned from their family doctor.

Mittendorf studied one thousand cases of ocular headache. He found an unusually large number of school children and college students, as well as women, who have had but little out-door exercise, and whose muscular system was undeveloped, were among his patients. He lays much stress on out-door exercise and gymnastics, as well as glasses, in the treatment.

Out of his one thousand cases the causes were: Astigmatism, eighty-three per cent; hyperopia, or far-sightedness, eleven per cent; myopia, or near-sightedness, two per cent. One hundred and nineteen were near-sighted astigmatism, seven hundred were far-sighted astigmatism.

Two hundred cases of ocular headache taken from my own records agree very closely with Mittendorf's report. \* \* \* \*

Want of quick perception is also a characteristic of this affection. Moreover, if the error be far- or near-sighted astigmatism, with the defective axis nearly horizontal in both cases, lines perpendicular are most distinctly seen. Persons with notable error get

on moderately well, because most objects which we deal with have greater height than breadth. Such is the case with Roman type, trees, men (as a rule), buildings (especially in Chicago), statues, and the majority of objects. The height is often exaggerated, but the patient is not aware of this.

But if the axis is in the vertical or oblique direction, or the eyes are unsymmetrical, trouble announces itself early. An attack of illness, constant eye-work, excessive grief, etc., will reveal astigmatic errors which were previously unsuspected.

The more pronounced the head symptoms, the more searching must be the examination for any defects in sight; and if found, it should be immediately corrected by accurately-fitted glasses.

More glasses are worn now, not because people are not born with as good sight as they used to be, but because the eyes are taxed more to-day than in the past.

Take dentistry, for instance. I think you will bear me out in the statement, that owing to the great advance in dentistry (especially operative), more time is required, and the eyes undergo a much greater strain in the details of the work than they did fifteen or twenty years ago.

This increased demand on our sight is seen also in all walks of life. Who would have supposed, twenty years ago, Sunday papers would ever print fifty to sixty pages, to be read on a day set apart for rest.

Another reason for glasses is because the eye has been more intelligently studied, and to-day many people are adopting glasses because they have proved their usefulness in the treatment of ocular headaches.

Every person troubled with headache not traceable to some disturbance of the general system, who has not tried the use of appropriate glasses for relief, has neglected a most efficient cure furnished by optical therapeutics.

*International.*

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A small tumbler, half filled with small shot, makes a very handy little article for holding burs and drills, placed point up. It saves considerable time and trouble by selecting out the ones that I may want for any case just previous to commencing an operation. When the patient has left the chair, the holder containing the dirty instruments can be taken into the laboratory, cleaned, sterilized, then replaced in their proper places in the burrack. In this way none are ever forgotten or overlooked in the cleaning process.

*D. V. Beacock.*

### SMUDGED GOLD.

The common method of annealing gold mats, pellets, or cylinders, by holding them over or in the flame of an alcohol lamp or Bunsen gas burner, is a practice which, while ordinarily successful, is liable to occasion defects in the fillings.

The resulting imperfections are not often observable in flush-finished fillings, though some of these subsequently scale at marginal points on their surfaces; but elaborate building or contour work not infrequently meets with most disappointing disaster, due to the smudging of the gold by the incomplete combustion of the flame fuel. Yet the real cause of the calamity is unnoticed, and fault found with the gold, or the possible presence of a leak in the dam or other source of moisture suspected, whereas the first thought following the surprising failure should be: "The flame is at fault." Clearly one of the most important preliminaries to a gold operation should be a careful scrutiny of the annealing flame, to be sure beyond a peradventure that there is not a trace of smoke; that the combustion is perfect. The wick of the alcohol lamp is usually too tight in its tube, and not loose enough in its assemblage of fibers to permit a free flow of the fluid fuel. Of course, the appearance of a single glow point at a fiber end of the wick is a certain sign of smoke, and should at once be remedied. When a lower grade than 95 per cent alcohol is used, the residual fluid, after a few hours' burning, becomes so watery as to lessen combustion and cause the charring of the wick-end; and the evaporation from the wick will lower the quality of the alcohol. The sight of a blackened wick-end leaves no doubt as to the probable character of the annealing and the operative work done by the use of that lamp.

The illuminating gas of divers cities differs in quality, and even in the same city varies from time to time in its heat and light giving properties; therefore the ordinary Bunsen burner is liable to vary in its degree of combustion; but the habit of closely observing the flame and keeping it regulated to the blue point of complete combustion will tend to the avoidance of the risk of smudging, the main thing being to be sure that the burner is a good one. It is well to keep at hand a piece of white porcelain—for instance, a small butter plate—and by occasionally holding it for a minute or two over the flame gain an assurance of the entire absence of smoke. When the gas is of a poor quality, the impurities and the gaseous products of their combustion contaminate the gold to a degree incompatible with a perfect welding.

The mica method of annealing is preferable, as avoiding all risk of a smudge; but many practitioners are confirmed in the habit of flame annealing, and will probably continue to employ the means to which they have become accustomed, and which it is believed may be satisfactorily modified in the particulars herein mentioned.

*W. Storer How, in Dental Cosmos.*

[Gold is now prepared in such variable degrees of annealing there is no excuse for extra annealing.—ED. ITEMS.]

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### FOOD AND THE TEETH.

*Dr. Stockton, Newark, N. J.*

This is a subject that has been variably discussed for a great many years, and I don't know that we are much wiser to-day than we were when we first began its consideration. It is said that there is a balm for every wound in the *vis medicatrix* of nature, and if that be true we should be able to discover it, and if it were discovered we certainly should find something that would repair the loss that comes on our teeth; just as the physician and the scientist of to-day are able to discover remedies for other diseases. My attention has been called to a remedy by which, if the gentleman tells the truth, the discoverer is able to cure rheumatism almost invariably. Now, if it is possible that this gentleman has found a remedy for that painful and tormenting disease, why cannot we find a remedy for the ills that beset humanity concerning their teeth? I am not enough of a scientist to discuss this subject except, in the language of my friend, Dr. Luckey, on general principles; but on these I think there must be something somewhere, that will be found some time, that will place us in a different and a better position from that which we occupy to-day. I know a family in which one boy has splendid teeth, and another and succeeding child in the same family will have teeth as bad as the other's are distinctly good. I know that succeeding children born of the same father by a different mother will have teeth of exactly the same characteristics; one child will have a most perfect set of teeth, and the other as poor a set as can well be erupted. Why is it? You would say that the same influences that produce the one perfect and magnificent set of teeth, all things being equal, would produce the same in another child. We know it is not so; why it is we do not know. I wish I had the vivid imagination and command of language that our friend Dr. Dwinelle had. Before this society, or perhaps some other, he portrayed the influence and

effect of animal phosphates on the teeth in contradistinction to mineral phosphate. He told us that in some Eastern country—India or Africa—the people were dying by thousands of a disease that had formerly yielded to their remedies, though they continued to take, as they supposed, the same remedies that had cured them before; but the man who prepared the medicine had become rich and sold out, and his successor used in the manufacture of the medicine a mineral instead of animal phosphate, and the result of this change was that the people died by thousands. It was finally discovered that they were using a different phosphate; the animal phosphate was substituted, and the people were cured and lived. Now, if we could only discover some remedy of equal certainty for the diseases of the teeth, what a blessing it would be. It is well known that if you feed a dog for a few months on starchy food, his teeth will decay. Therefore there must be something in feeding; and if we knew what it was, we could take into our systems, as is shown in the case of the dog and other animals, something that would remedy this defect.

*International.*

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#### KEEPING THE GINGIVAL PORTION OF A CAVITY DRY.

I have found the use of trichloracetic acid preferable to carbolic acid, the eschar which it makes being much dryer than that formed by carbolic acid. It can be used of the same strength as prepared for use in the treatment of "pyorrhea," viz., by opening the original ounce bottle of crystals and simply filling the inter-spaces with water, making an ounce bottle of liquid trichloracetic acid from the entire original bottle of crystals. The application of trichloracetic acid of this strength keeps the gum margin so dry that oxiphosphate can be inserted in contact with it without injury.

I find the matrix a valuable adjunct in the use of amalgam in many cases, using for this purpose a thin piece of German silver or cold-rolled steel, trimmed to proximate the curve of the cervical margin and forced just a trifle between the gum and the margin of the cavity. The labio-lingual plane of the matrix can be formed with crowning-pliers to any shape desired; in some cases perfectly straight, and in others even convex at the gingival portion of the surface next the cavity. A matrix thus formed can be held in place with a wedge or two, having the wedges made by the assistant and kept on hand in various sizes, preferably with scarcely any taper from end to end, but with the coronal edge thinner than the gingival edge, this difference being easily increased by the insertion of

a smaller wedge at the side of the larger one near the gingival edge. It is scarcely necessary to add that a wedge is never used a second time. The matrix may also be secured by tying a thread around it and the tooth. A matrix thus made and secured consumes but little time and facilitates the work very much, and also avoids lacerating the gums by the use of steel or orange-wood to smooth the cervical margin. The matrix being held in close proximity to the cervical margin, it is not necessary to use any instruments on the surface of that portion of the filling, and the "knuckle" has a smooth surface, which more nearly proximates the adjoining tooth than in shaping it with instruments.

The adaptation of the matrix to the surface of the root of the tooth can be made more perfect (especially does this apply to the superior bicuspids) by allowing the thread to contain a knot or two against the center of the matrix.

*W. E. Walker, D.D.S., Bay St. Louis, Mo., in Cosmos.*

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A dentist's manner in his office is as important to success as ability in a technical way. We should carry about us an air of dignity and repose; cultivate a low tone of voice. We, here in the West, talk in a shrill, high key, and so marked is this characteristic that our nasal tones are satirized as keenly as the Frenchman's shrug or the Englishman's bluster. One can be companionable and win the respect of his patrons without going to that degree when they will all call him "Doc." Of course, there are some people whom no amount of frigidity of manner can tone into calling a man by his proper title, but I have noticed that the dentists who are universally called "Doc," have brought this disgrace on themselves by a disgusting familiarity with people on the streets or in the stores. For these I would advise the reading of "Lord Chesterfield's Letters to His Son." Keep off the streets and out of the stores, except when business calls. Stay in your office or at your home, and it is probable that after you have pursued this course for a year, people will begin to call you "Doctor." Avoid treating patients in that excessively sultry manner that at once makes them suspect a hidden purpose or snare. One must be kind at heart to convey the impression of kindness. Tact in handling patients is nothing more than a real sympathy combined with an ability to enter into the experience and moods of those about us. The more genuine a man is the easier it will be for him to gain the patronage of those who come in a tentative way to his office.

*Dr. Bergstresser*

## FOOD AND THE TEETH.

*Dr. Luckey.*

Our present high state of civilization and our present modes of living are artificial and unnatural in almost every respect. The teeth of the people are not what they were a hundred years ago; much less perfect than they were five hundred years ago. If any one will take the trouble to inspect the skulls of the ancients down through the ages to within two or three hundred years, and note the difference in the dentures of those skulls from those we see in our offices to-day, he will be convinced that the reason of that difference and deterioration is the artificial and unnatural habits of our present state of civilization; which means French cooks, softened food, the eschewing of everything that requires mastication, and the rejection of that portion of the wheat kernel that we require for the upbuilding of our bony system. Professor Charles Mayr, of Springfield, Massachusetts, as Dr. Meeker has said, plainly stated, two years ago, that the preparations of phosphate of lime prescribed by the medical and the dental professions to be taken into the system for the upbuilding of bony tissue, are absolutely of no avail. I remember distinctly that many years ago, while I was at college, our professor gave us lecture after lecture on the advantages to be derived from the administering of syrup of lacto-phosphate of lime for the upbuilding and preservation of the dental tissues, and he took the trouble to cite instances where one child in a family had soft and delicate teeth, subject to the usual ravages of decay, and a succeeding child, born when the mother had been under the care of a physician, and was subjected to special diet and the administration of phosphates and phosphites, would develop a perfect set of teeth in every respect, hard and perfectly formed; but in my studies in this direction I have been inclined to favor the theory of Dr. Mayr; my experience has not led me to believe that there is much advantage to be derived from the special dieting of any given child. I believe that if it were possible to isolate a child and bring it up on a special diet, rich in phosphates, avoiding the prepared dishes which prevail, it might be possible to improve the bony tissue. Dr. Stockton has expressed a wish to know why one child in a family will have a perfect denture and another child in the same family will have an imperfect one. It is no more strange than the fact that one child will be a perfect Apollo and another child of the same parents will be a perfect abortion, a cripple, hump-backed, or deaf and dumb. Why it is so we may never know.

The same rule applies to the teeth. The effects of the diet and modes of living of the parents are undoubtedly manifested in the child, and the child is further affected by the manner in which it is brought up; and I think the remedy lies in a return to more primitive and natural ways of living, and it will take many generations to reach it.

*International.*

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There are some who tell of the decisive way in which they treat that class called "shoppers." Rudeness is uncalled for in dealing with any person who has come into our office, even if only to seek dental work at the lowest possible price. In a polite way one may give an estimate of what that service may cost, and it is needless to give offense while doing this. Many of these people, from lack of education, have taken a low view of our profession, and if a few moments' explanation is given them, their patronage may be secured. Some of my best paying patrons entered my office originally as "shoppers." But the established dentist has little annoyance from these people, for his time is usually well engaged by those who are willing to pay him a fair price for his services. There can be no arbitrary rule set for charging for dental services. It is a good plan just to ask as much as will bring you patronage to fill all your time. How foolish it is to see a dentist set up a schedule of prices that he can induce no one to pay! There are some who through reputation, skill and tact can secure triple the price for the same piece of work that I do, but that would not justify me in driving away patronage by adopting their prices for my patrons. If patrons cannot be found who are willing to pay twenty-five dollars for plates, or fifteen dollars for crowns, they should be sold for the best that can be obtained. But if it is found necessary to reduce plate-work to seven dollars a set, and gold crowns to five dollars each, there should be no whining, for it is probably all they are worth. Genteel people will not pay champagne prices for lager beer work to an unkempt, frowsy, vulgar dental artisan when there are gentlemen practicing dentistry in the same street.

*Dr. Bergstresser.*

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The following method of setting a Logan crown, which is by no means new, will in the majority of cases enable a perfectly close joint to be made between the crown and root-end. Cut several small pieces, about one-quarter inch square, from a strip of thin articulating paper. In the center of each punch a hole with the

coffer-dam punch, about the size of the largest hole made by the Ainsworth punch. Having prepared the root-end, slip the perforated piece of articulating paper over the pin of the Logan crown and press it firmly into position, in contact with the root. On withdrawing the crown and removing the articulating paper, the points of contact will be found to be marked black. Grind these off carefully, readjust on the root as before, grind again, and continue the operation of fitting and grinding till the mark made by the articulating paper on the contact surface of the crown presents as a uniformly unbroken black ring. When this has been accomplished, the crown will be found to fit the root-end with the utmost accuracy. The advantages of fitting a crown directly to the root are, it would seem, self-evident from the mechanical standpoint, and involve besides the least expenditure of time.

*Ed., in Cosmos.*

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Dr. Bonwill's clinic at the Midwinter Dental Congress was two gold fillings, one in the first and the other in the second upper right bicuspid.

The first was involved from its anterior proximal through the medium and including the entire post-proximal surfaces. The pulp was not exposed and needed no protection. This was filled with Abbey's No. 20 gold foil, using his mechanical mallet, and without change of the point, in twenty-five minutes requiring one and a half books of foil (3-16 of an oz.). The caries in the second bicuspid involved the whole anti-proximal, coronal and distal surfaces. This was inserted by the use of two different points in the same mallet, consuming nearly one book of foil and completed in fifteen minutes.

The doctor also showed his application of pink gutta-percha to contour on proximal surfaces, involving much loss of structure, to act as a separating medium, to remain from one, six or twelve months to secure proper space. He called it his "sheet-anchor," and used it almost exclusively in children's teeth, and in many cases permanently for adults.

*Daily P. C. Dentist.*

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A year or so ago Dr. Hetrick gave a hint as to the value of sandarac varnish to secure rubber-dam to the teeth, instead of the painful silk ligature. It was one of the most valuable items I ever received, and if it has not been universally adopted it should be. It is absolutely demanded that dentistry should be made as easy as possible, and any neglect is scarcely less than criminal.

Many patients in a country practice are so situated that a prolonged course of treatment for aching or ulcerated teeth is out of

the question. When operating for such an one, and an exposed living nerve is found, it can almost always be successfully removed at once by injecting a solution of cocaine, under strong pressure, so that it is forced up to the apex of the roots; otherwise the removal will not be painless. When a fragment of these fresh pulps resists all efforts of the broach to effect removal, the heating of the Evans root-canal dryer and passing up into the root brings the fragment away at once. The potassium and sodium compound of Dr. Schrier will also disintegrate one of these fresh pulps so it can be taken out at once.

*Dr. Bergstresser.*

When I came twelve years since from college I was advised to put my prices low and get the crowd. It failed; for though it brought me work, it was from the rabble, who complained of even low prices, and often paid nothing. It also came near making a failure of me, for as I could not do the best work at the poorest prices I did poor work with poor materials. I turned about, putting my prices as high as any of my competitors and determining to do as good work, using the best materials. It took some time to counteract my blunder, but the good result came, and I advise every young man to commence at the first where I commenced after three years truckling to the rabble.

*W. W. Rowe.*

Synthetic chemistry seems to have no limits. The latest product which has been successfully made from coal products is camphor. It promises to be cheap, and the specimens submitted respond to the most crucial tests.

*St. Louis Medical and Surgical Reporter.*

HOW TO PROCURE AN IMPRESSION OF THE MOUTH WHEN THE PATIENT IS INCLINED TO NAUSEA AND VOMITING.—Get your druggist to make you some lozenges with one-quarter grain of cocaine to each lozenge. Before taking the impression, allow the patient to dissolve one of these lozenges in the mouth and swallow the spittle. If one is not sufficient, give the patient another lozenge, allowing time for the lozenge to dissolve slowly, and you will find that you can take an impression with plaster of Paris without inconvenience to the patient or yourself.

*C. V. Snelgrove, L.D.S., Toronto.*

Or better: Permit the patient to inhale the fumes of spirits of camphor from a napkin or handkerchief till all sense of taste and largely feeling is destroyed; then insert the plaster, and while that is in the mouth continue the inhalation.

*Ed. in Headlight.*

## OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

**Question 154.** *What is the composition, and what are the particular properties of trichloracetic acid; its relative strength with other acids; its general and special uses, etc.?*

Trichloracetic acid ( $\text{CCl}_3\text{CO}_2\text{H}$ ) is an oxidation product of chloral, obtained by treatment with fuming nitric acid and distillation.

It occurs in deliquescent rhombohedral crystals, melting at about  $55^\circ\text{ C.}$  ( $131^\circ\text{ F.}$ ). Is soluble in water, alcohol and ether.

Escharotic. Often used successfully in treating warts, hard corns, nevi, papillomater, venereal sores, and a test for urine albumen.

**Question 155.** *Is it advisable to make a partial upper plate with only one bicuspid, one central, and two cuspids?*

Yes. A plate or bridge.

**Question 156.** *Is it good, or malpractice, to make a partial upper plate so that it is retained by wedging the artificial teeth between the natural ones?*

It is not good practice. The wedging of plate forms only a temporary anchorage, opposes the proper articulation of teeth, forces them from their proper places, and the teeth are more liable to be broken from the plate in mastication, removal, or forcing to place.

These plates should be retained by suction, nicely fitted clasps or delicate bolts slipping into gold crowns, anchorages, or proper fillings.

**Question 157.** *I experience some difficulty in having the red rubber show through the pink in plate work, and would like to have a sharp line of red rubber. Please tell me how it is done?*

If you do not wish to vulcanite the red and pink separately, have the division of flask come where you desire the separation of the two colors.

Pack sufficient red rubber in the upper front part of flask to prevent the pink from being forced above the separation, and provide good vents, without surplus of rubber, that closure may require slight pressure.

Painting the plaster around necks of teeth, with rubber and chloroform, will assist in packing the pink facing.

A very interesting and illustrated article on this subject appeared in May number of *Dental Office and Laboratory*.

**Question 158.** *In repairing a gum section (set of teeth) even for a crack, with all the teeth imbedded in plaster, when put down the joints are clean and perfect, but after vulcanizing they come out unsightly and black. Why; and how can it be prevented? The answer in January ITEMS does not fill the bill.*

If you fill or cover all clean joints or cracks so no gas or oxid from the sulfur and rubber can enter, they will be free from discolorations.

If the crack is exposed on inside of block, lay a small piece of gold or tin over it, and allow it to fold over the edge of gum. Give good vent, and use spring fastenings to flask.

Dr. D. N. A.—The case you mention is injection of blood caused by arsenic. This is not a rare occurrence, especially with young patients.

Remove pulp, cleanse cavity and root thoroughly with warm water; which, in this case, will be sufficient, if canal is left open a few days.

**Question 159.** *What is the best method of securing an articulation for full upper and lower dentures? I sometimes find it necessary to remove a portion of the molars in order to secure the proper closure of the plates.*

If the wax for trial plate is too long at the back, a closure of the mouth will bring the wax in contact at the front by throwing the plates from the jaws, and the articulation often appears correct. If a thin spatula is placed between the forms, it will demonstrate at once a faulty articulation.

We prefer to have the wax sufficiently raised, at the location of the bicuspid, to prevent the wax striking at any other point till the forms have been shaped for length of front teeth and fullness.

By bringing the pressure equally on side of plates rocking is prevented; and the application of heat, when wax has been properly trimmed at these prominent points, will allow an even and proper closure.

**Question 160.** *A child, aged fifteen months, with crowns of upper centrals entirely gone, face swollen, and gums in a very bad condition from ulceration. Teeth erupted at three months, were first attacked by turning yellow, and gradually crumbling away. Laterals are beginning to be effected in same way. Other teeth in perfect condition. Mother states that three older children lost their front teeth in the same manner before two years of age. Cause, and best treatment?*

A similar question was answered in a back number of ITEMS, and extraction was advised.

The cause is claimed by some to be faulty development, sickness, the use of powerful medicine by child or mother at time of nursing, and abnormal secretions of mouth.

The cause for posterior teeth being in a healthy condition, is that the child was free from the above troubles, and at the time these teeth erupted the process of assimilation was not interrupted.

We have a case where all of the temporary teeth crumbled away, remaining even with the gum during eruption; and the child to-day is about eight years old without a tooth.

Calomel was administered when the child was quite young, the throat being so effected that it is difficult for her to swallow; the tongue has the appearance of the outer bark of a cork tree.

Of course, articulation is impossible, and her wants through life can only be made known by signs, understood by her parents.

**Question 161.** *A young lady has a perfect set of teeth, excepting a denuding of the dentine. The upper centrals are sensitive to heat, cold, and contact of food. Using her expression, "It seems as if they were being forced painfully into the jaw." The cutting edge is without enamel, and no chance for filling. What is best treatment?*

Back answers have advised nitrate of silver treatment, polishing, etc.

Placing gold tips on the points of teeth, or replacing crowns with porcelain will, in time, be necessary if the teeth cannot be filled.

**Question 162.** *A girl, aged thirteen, broke the central incisor by a fall. I have prepared the root for a crown. What do you advise for a crown; and when would you crown, if at all?*

I would crown at once, temporarily, if not permanently.

The crown to use will depend on the extent of fracture. If porcelain crown is used, save all you can of natural crown or root, and tip or crown with porcelain to restore the missing part.

If full crown is required, allow a portion of the palatal surface to remain, if that exists, and bevel to the front, so that a narrow band can be used on the labial surface, with sufficient width at the back to extend some distance on the porcelain, and allow pressure of lower teeth to come in contact with it and the remaining wall of tooth during mastication.

If tooth is even with gum, do the best you can, and replace it when necessary.

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Dr. Kingsley writes in the *Cosmos*:—It has been generally supposed that a child with a congenital cleft must wait till the jaw and alveolar arch were pretty fully developed, or till about the twelfth year of age, before it was prudent to apply an artificial palate. I favored that idea myself many years ago, partly because I wished to avoid the annoyance to which the child might be submitted, and partly to save the expense of a second apparatus when the child should become older. But the experience of many cases since has convinced me that my hesitation was a mistake. The advantages gained by an early interference far outweigh any financial consideration, and I find that children become accustomed to the presence of such a foreign body quite as readily as adults. The benefit to be gained by preventing improper efforts at articulation from becoming fixed habits, as well as the greater ease with which habits already formed can be broken up, must be manifest to every one. Children adopt involuntarily the tone of voice, accent, and peculiarities of utterance of those with whom they are associated, and I am satisfied that perfect results are attained more readily and with less effort by supplying an artificial velum early in life.

## PRACTICAL POINTS.

*Mrs. J. M. Walker.*

**Correct Articulation in Bridge-work.**—Place on the gum, between the pier teeth, a bolster of wax, and put in position the pier crown and the dummies as they have been cemented together with wax on the articulating model. Have the patient bite on them, and when each tooth is in proper position, invert on the jaw a partial tray filled with a half-and-half mixture of marble dust and plaster, mixed with water primed with sulfate of potash. Remove from the mouth carefully, clean off the wax, and the piece is invested, ready for soldering.

*Wm. Crenshaw.*

**To Secure the Retention of Applications on Cotton in Tooth Cavities.**—Flow oxisulfate over the pledge of cotton.

*W. D. Miller.*

- **To Cut off Teeth for Crowning.**—With a small-sized spear-point drill, go directly through the tooth from labial to lingual surface. Enlarge the hole with next larger size drill, and continue till the tooth is cut off, leaving a regular concave surface. This avoids the unpleasant jar, noise, and slipping incident to the use of bur or facer.

*F. E. Bucks.*

### For Fetur of Breath (with Stomatitis).

R.	Liq. sodii chlor.....	ʒiss.
	Dec. cinchone flav.....	ʒv.
	Millis rose.....	ʒiss.
	Spr. caryophylli.....	M. iv.
M.	Sig.—Mouth wash.	

*D. M. Sabater.*

**To Increase the Density and Hardness of Amalgam Fillings.**—Heat a portion of the mixed amalgam over a lamp till the mercury volatilizes and the mass becomes comparatively solid. Press this into the soft amalgam already placed into the cavity. Excess of amalgam from previous operations may be used in this way.

*Dwinelle.*

**Protection of Nearly Exposed Pulps.**—Make a wafer of gutta-percha, and moisten one side with eucalyptol. Lay with moistened side down over point of near exposure and cover with oxiphosphate. When this has hardened, fill as desired.

*W. J. Phillips.*

**Prompt Healing of Slight Wounds.**—Wash with bichlorid mercury, 1-1000; dry thoroughly, and smear with chloropercha. All danger of infection is avoided, and the wound will heal immediately.

*Henry Barnes.*

**Cocain Injection.**—To eliminate all danger in the injection of cocaine, Gauthier gives the following formula:

R. Cocain hydrochlo.....	grs. iij.
Alcoholic solution nitro-glycerin, 1 per cent.....	M. x.
Distilled water.....	fl. dr. iiiss.

Each syringeful, (16 m.) contains  $\frac{1}{3}$  gr. cocaine and 1 m. nitro-glycerin solution. Instead of collapse, the face flushes, and the heart beats quicker and stronger, and the patient is altogether comfortable.

*Am. Med. Surg. Bulletin.*

**Pulp Devitalization.**—Arsenic in infinitesimal amount and fineness, combined with carbolic acid, is a sedative; it assuages pain immediately, and subdues inflammation. The carbolic acid paralyzes the pulp, while the arsenic devitalizes it. It will cause no pain, unless there is direct pressure on the pulp.

*J. A. Robinson.*

**Pain from Congestion of the Pulp.**—Wash the cavity with peroxid of hydrogen and quickly dry. Apply pure chloroform on cotton, then melted carbolic acid. The patient will be comfortable in from five to ten minutes.

*A. W. Harlan.*

**Rosin for Root-Canal Filling.**—Powdered rosin, well moistened and dissolved with alcohol, makes an antiseptic, insoluble root-canal filling.

*D. V. Beacock.*

**Cocain Hypodermic Injection.**—To the cocaine solution add listerine to prevent sloughing, and hydronaphthol as a heart stimulant.

*Dr. Kulp.*

**Salol in Capping Exposed Pulps.**—Liquefied in a test tube over the spirit lamp and mixed with iodoform, aristol or oxid of zinc, forms an antiseptic mass most useful for capping exposed pulps and for filling the bottom of deep cavities.

*N. E. Mascort, Paris, France.*

**Devitalization of Highly Inflamed Pulp.**—I have most satisfactory results from the use of iodoform in small quantities in connection with arsenic. So far as tried there has not been a particle of pain in acute pulpitis.

*Jas. Truman.*

**Pericementitis.**—Instead of the usual local application of aconit and iodin, dilute the mixture and inject into the loose tissues, near the upper border of the alveolus. If this is placed exactly where it is needed it is quickly absorbed, and affords almost immediate relief.

*W. I. Jones.*

**Hemorrhage Following Tooth Extraction** can be promptly arrested by filling the socket with cotton saturated with fluid extract of geranium maculatum, one part to three of water.

\* \* \*

**To Obtund Sensitive Dentine.**—Apply the rubber-dam, remove all soft caries, place crystal zinc chlorid in the cavity, tie up the rubber-dam so as to make a little water-tight bag, cut off surplus, and proceed with another case while awaiting results.

*Dr. Jack.*

**An Antiseptic Dentifrice.**—Prepared chalk, powdered orris root, soap, glycerin, and an equal quantity of pulverized potassium chlorate.

*Am. Med. Surg. Bulletin.*

**In Accidental Pulp Exposure** apply morphin and creasote with a dust of iodol; cap and insert temporary filling.

*Van Der Pant.*

**Alloy for Gold Solders.**—Equal parts by weight of copper, silver and zinc. Melt copper and silver in a crucible, and gradually add the zinc in small pieces. When the blue flame of gas is thrown off, pour into an ingot and label "alloy for gold solder." Take of this alloy one part, and of the gold plate you are using, three parts, and you will have a solder that will melt easily, flow smoothly, and will not change color in the mouth.

*J. A. Robinson.*

**Hypersensitiveness at Necks of Teeth.**—Apply trichloracetic acid 10 per cent, except where there is acid reaction of the mouth; in that case use "Robinson's remedy."

*I. Austin Dunn.*

**Removal of Blood Stains.**—Accidental spots of blood on the clothing can be promptly removed by the application of pyrozone.

*J. E. Woodward.*

**Diagnosis of Pulp Stones.**—Persistent resistance to arsenic is a good diagnostic symptom of pulp stones. "Persistent pain that you cannot stop means pulp stones, and it means it always. There is no question about it."

*Ottolengui.*

**Protection of Cement Fillings.**—Instead of paraffin which scales off as soon as wet, melt together rosin and wax on a spatula, and pour on the filling after it has stood a few minutes. After a day or two they will take a polish almost like ivory.

*E. T. Darby.*

**Cleaning the Teeth.**—A two per cent aqueous solution of trichloracetic acid to moisten the pumice is perfectly harmless. I have used it in my practice for some time, and find it far superior to tincture iodin for removing the "green stain" on children's teeth.

*W. H. Jones, D.D.S., Fultonville, N. Y.*

## ITEMS.

I notice in June ITEMS, on page 349, the advice of Dr. Thompson to use cyanid of potassium for nitrate of silver stains. Let me add a word of caution to those unacquainted with this most dangerous substance. Enough can be, and has been, absorbed by the skin to produce very serious consequences, if not death. Under no circumstances should it be used in the mouth.

*W. O. Robinson.*

\* \* \*

**COSTLY METALS.**—The most costly of all metals, excepting only gallium, which is worth \$3,000 an ounce, is germanium, which is quoted at \$1,125 an ounce. Rhodium is worth \$112.50 an ounce; ruthenium, \$90 an ounce; iridium, \$37.50 an ounce; osium, \$26 an ounce, and palladium, \$26 an ounce. The last is about equal in value to gold. These metals, however, are of no great commercial importance, as they are but little used.

*Inventive Age.*

\* \* \*

I have never been able to understand how anything is gained by using small pieces of rubber-dam. It should be large enough to well cover the mouth, cheeks and chin, so that it may be held and kept out of the way during operations. Many breaks about the necks of the teeth after the dam has been applied are caused by punching the holes too near together; punch them so far apart that the rubber will not be stretched in the interdental spaces; and be sure to punch enough holes. *Dr. Henry Barnes.*

\* \* \*

**AMERICAN DENTAL ASSOCIATION.**—The thirty-fourth annual session of the American Dental Association will be held at Old Point Comfort, commencing at 10 A. M., Tuesday, August 7th, 1894.

*George H. Cushing, Recording Secretary.*

The Southern Dental Association meets at the same place August 2d; and the Old Virginia entertains both.

[Pay full fare going, with receipt from railroad agent to get reduction on return.—ED. ITEMS.]

\* \* \*

The virtue of an amalgam consists in its absence of change. None of the agents used in filling has excited so much discussion pro and con. No material is in more common use, and many cases are presented where such a filling seems the only one practicable. An amalgam that will retain its color and not shrink, properly manipulated, is second to no other material as a tooth

preserver. I have seen fillings of this material that had been in constant use for twenty years, and apparently in as good condition as at first. Of course, much depends on the way it is manipulated. Too much mercury is sure to destroy the setting properties, while too little favors the disintegration of the filling.

Dr. B. D. Brodson.

\* \* \*

A careful record has been kept at Yale College for the past eight years, with reference to the physical condition of non-smokers as compared with smokers. It has been found that non-smokers are 20 per cent taller, 25 per cent heavier, and have 60 per cent more lung capacity than smokers. A recent graduating class at Amherst College presented a similar difference in favor of non-smokers, who had gained in weight 24 per cent over the smokers, and in height 37 per cent, and also exceeded them in lung capacity.

Exchange.

\* \* \*

HINTS WORTH REMEMBERING.—To remove the stains of tincture of iodin from either the hands or napkins, apply strong ammonia. The spots will immediately come out clear.

The stains of nitrat of silver, on either the hands or napkins, can be easily removed. First, cover the spots with tincture of iodin, wait a few moments, then apply strong ammonia, and rub well. If on the hands and not discovered till the hands are washed, black stains will be well set, but proceed as above and they will disappear at once.

George A. Maxfield, D.D.S., in International.

\* \* \*

SILVER AND ALUMINUM.—The utilization of the well-known property of aluminum to lower the fusing point of iron is a very neat and clever application of a curious phenomenon.

Silver is the metal which seems most useful in improving aluminum. Five per cent silver gives to aluminum elasticity, which is wanting in the pure metal, increases its hardness, and is capable of being polished, and does not injure its malleability, or much increase the weight. This alloy is excellent for handpieces and handles of instruments. It is about as hard as coin silver, and is not affected by sulphuretted hydrogen; hence it does not easily tarnish.

Extract British Journal.

\* \* \*

To obtain opacity where the dentine has been cut away from the enamel along the labial margin in the anterior teeth, the rubber is applied and the tooth thoroughly dried as for bleaching. The inside of the cavity is painted with a coat of copal ether varnish, using for this purpose a thoroughly and carefully bleached camel's-hair

brush. Cut a piece of thin white glazed paper of the right size and shape to fit the cavity; varnish one side with copal ether varnish and lay that side against the labial side of the cavity, carefully burnishing it in place, being sure not to leave creases or folds, as they will cause a dark line to show through the enamel. Now cover this very carefully with oxichlorid of zinc cement, and place in the permanent filling after allowing the cement to thoroughly sweat out any moisture.

*Exchange.*

\* \* \*

I have used the following mode of filling roots for three years, but consider it most satisfactory and valuable where we are unable to remove the entire contents :

Having adjusted the rubber-dam I remove all the contents from pulp-chamber and canals possible. I do not think the sensation sometimes felt in these roots is from the air pressing on the nerve filaments, but from a small portion of the remaining nerve. I take oil eucalyptus and enough aristol to color the oil to a dark brown, and with a few threads of cotton wound around the broach, I pump sufficient into canal to thoroughly saturate it. Then proceed to fill in the ordinary way with chlora-percha and gutta-percha points.

I, of course, take all pains possible to remove all the pulp and fill the chamber as thoroughly as possible. But in many instances I know a part is left, yet have had no trouble.

*J. F. Wallace.*

\* \* \*

Emol is a provisional name given to a newly-discovered product which in ordinary respects is allied to fuller's earth, but which is distinct from all market varieties of this substance. It is a product found in Perthshire, Scotland, closely associated with serpentine marble, chalcedony, onyx, and copper. It contains steatite and minute traces of lime and oxid of iron. (*British Medical Journal.*) When purified it is a soft, delicately pink impalpable powder, which produces no gritty sensation when placed on the tongue. It has a powerful softening effect on hard lime-water, and can be used with warm water as a natural soap, leaving the hands soft and smooth. But constant use of emol as a cleansing agent results in so great a softening of the skin on the hands that they become unfit for use, and this fact has suggested its employment in removing callosities and horny excrescences on the palms and soles. In this application it was found very successful, a paste being made with water, and thickly applied, resulting in the peeling off in layers of the epidermic masses.

*Amer. Soap Journal.*

[Good for corns.—ED. ITEMS.]

S. H. Guilford: In common with other busy practitioners, it has been my lot to encounter more cases of pyorrhea than I cared for, and to meet with less success in its treatment than I had hoped to attain. The insidious character of the disease and its seemingly growing prevalence certainly lay on us, as professional men, an increasing obligation to try to fathom the mystery of its etiology, that our remedial measures may have a scientific foundation.

The first one, so far as I know, to give this disease anything like the attention it deserved was Dr. Riggs, who, while he paid little attention to its etiology, deserves great credit for the assiduity with which he labored for the amelioration of the condition and the success which attended his efforts.

\* \* \*

In the March number of the ITEMS I saw, under "Practical Points," a method of "Sterilization of Instruments by Cremation of Bacteria," by H. A. Smith. I heard him speak of this method several years ago, but from the nature of the burning of alcohol I did not think it was very good, so I experimented. I took an ordinary thermometer and dipped the bulb in alcohol, and ignited it as suggested. The heat developed was indicated by the thermometer to be from 116° F. to 120° F. I tried it several times, with about the same results. From what we are taught, this would not bring the sweat out on some of them, let alone destroying them. However, I may not understand how to do it. If held in the flame of spirit lamp I should think it would draw the temper. The reason I don't think the burning off of the alcohol from the instrument will sterilize it, is because as alcohol burns there is a film of vapor between flame and instrument.

A. A. Kumler.

\* \* \*

TECHNIC TEACHING IN COLLEGES.—Probably the greatest advance in college instruction in recent years, has been the introduction of technics as a fundamental basis from which to start the student in his acquirement of knowledge and manipulation in the practical departments of his work. College instruction is not yet perfect, but it is vastly nearer being perfect on account of this one thing. We do not believe that teachers in colleges where technics are not taught thoroughly and systematically, can form the slightest idea of the benefits to be derived from this line of work. It directs the beginner into the proper channels at his very entrance into the college, and gives him an intelligent basis to work on throughout his whole college course, and, in fact, throughout his whole course in life. No man can fail being a better dentist as the result of this kind of instruction.

*Ed. Review.*

## EDITORIAL.

### THE TREE AS A TYPE OF GROWTH.

Our growth is somewhat like the growth of trees. Even the circulation of the fluid, and the manner of its distribution, and the materials of growth, are in many respects similar. The limped sap—how like water it is, and how like blood?—defies gravitation and runs right up the tree like a thing of life. See the rootlets spread out, and with their little fingers take up water and sift it and analyze it, selecting just the elements, and just the kind and proportion of minerals required for their particular fabric. How can they know what to take, and the exact proportion of each, and what to refuse? The pine needs much more of one element than does the oak. The orange tree a little more of another than the apple. Why is there no confusion or mistake? The little fingers of each know just what to do. Wonderful! Have they intelligence? And every step upward the sap knows just where to leave this, that and the other ingredient, and just the right proportion—here to make bark or trunk, there to make branch or stem, or twig or leaf; and at just the right time and manner, and places, to make bud and flower, and fruit and seed. What delicate selecting of elements to produce their variety of tints and colors, of blushes and hues, and of changes and modifications from spring to fall!

Like a living stream—yes, like organized life, with claws and tendrils—the sap passes up from the root to the leaf-lungs, that it may give life and may receive life more abundantly. But why, as it climbs, does it not fall back? Ah, it is from the same providential provision that places valves in the arteries—they open to receive the oncoming fluid, but shut to prevent its return—actually with waves of pulsations. On its way it spins gauzy cells, making filaments so fine and frail and delicate that even the microscope can hardly reveal them. What force thus carries the sap to the very extremity? Some say it is the sun's action on the leaves, making a vacuum under the thin upper skin. But the sap climbs up through the cells, forming wood in every branch and twig,

sun or no sun, day or night, and even the more rapidly in the spring before the leaves are formed, and as much in the night when the sun is gone.

This is the way the trees grow. But do we understand the how? The force? The method?

If we could see the unseeable attractions and affinities and affiliations by which cells are formed, and by which cell is bound to cell to form fibers, and how mysteriously fibers are glued together to form strong, solid, enduring wood—as filaments form fibers, and fibers are bound together to form muscles in our body—if we could see how, as this fluid comes up higher, it transforms itself into the various ingredients and organic forms, and distinct parts of the tree and of tree life, we should be charmed with the vision of divinity in nature.

The fluttering leaf, the tiny twig, the swaying branch, the graceful bough, the sturdy trunk, and even the anchored roots, would have a new lesson for us.

Though the difference between the crude earth and the noble tree is great, it is only the secret workings of the gradual but constant and laborious transformation of dead minerals into vegetable life. But what a transformation!

By these processes perfection comes to the tree through such an infinitesimal portion of the earth that if the seed of the tree had been planted in a large pot of earth, though it was kept from all accumulations except the falling leaves, the weight of the earth would not be a pound less when the tree became of five hundred pounds weight. The multitudinous activities and accretions, constituting growth, would come from such mysterious vital climatic transformations that from all these years of increase the earth would not be perceptibly decreased.

But how much more marvelous the compound growth of man! Truly, "we are fearfully and wonderfully made." Our body, soul, and spirit; our passions, will, and mentality are marvels of being and doing. Still, all the way from embryo to perfected form, from childhood to manhood, from weakling to giants, improvement comes through waste and loss and destruction, as well as by accretion, assimilation and transformation.

There are so many gnarled, twisted, ill-shaped trees, that we take pride in one tall and straight and symmetrical. Oh, for a well-balanced, grandly developed man! The very growth of some trees makes them deformed and ugly. They are forced out of shape by some great rock or declivity, or overshadowing cliff, or their roots are exposed, or some hidden enemy is gnawing at their vitals. How often it is so with men. Some trees, like some men, are afflicted with big-headedness and a lack of understanding, so that some rough wind topples them over; or, it may be, the trouble is for the want of head; the vitalizing fluid never gets there.

Like trees, we exhibit characteristics for special use. Every one of us is placed here for some particular quality we possess. The God who assigns us a place has fitted us to fill it, and if we are faithful to our part of the program, and do not abort His purpose as fruit trees do sometimes, we shall give to the world what God designed us to bear.

This evident design in our make-up is what scientists call being true to name. If as such we mature, and bear our special fruit, we shall not rival others, but add to the variety that insures beauty, harmony, and satisfaction. If we are an apple tree, we do not have to be as tall as a cocoanut, we only have to bear good apples; we may be incapable of standing alone, yet if we bear luscious grapes, we shall be a perfect vine; we may be only a thorny bush, but if with our thorns we bear nice berries we shall be appreciated. Whether an apple tree or a cocoanut tree, a grape vine or a berry bush, let us be true to name, by making our fruit perfect.

But we possess more than the life of a tree which receives its support only from without, and therefore we must be more than we are made. We must be true to our species, but improve our species. Inspiration from within may give us a new life: A spiritual life that raises us above the ordinary life about us. This gives us more than the life of the rock that is lost in the vegetable, more than the life of the vegetable that is lost in the animal, more than the life of the animal that is lost in the general wreck of time. It is a life grander, greater and more gloriously destined than any other life about us. We are the climax of all creation, and have a

life and a sphere and a destiny all our own. A tree grows from what it imbibes, the mere animal grows from what it eats, man, in his lowest estate, lives on his sensuous passions, but if we are a man in his noblest development, in his highest sphere, in his most glorious destiny, we have appetites and passions and enjoyments that can only be satisfied with the food of angels.

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### THE THRIFTLESS, SHIFTLESS DENTIST.

Oh, do not loaf about in that way. Why squander your time in shiftless idleness while there is so much to do? It is childish. No wonder you do not get on in your business better. Who will patronize a lazy, loose-jointed, thriftless dentist? He is sure to be a bungler. Patients of intelligence and money rather pay double for their work to a thrifty dentist, for he is sure to be skilful and abreast of the times.

Get out of your dirty shell and straighten up. It is astonishing how much a little soap and back bone and enterprise will do. The world needs you and your work, and pays well for what you do, if it is what it should be. But neither you nor anything you can do will be accepted while you are gaping and yawning in your shirt sleeves. Sluggishness and shiftlessness are stamped on your very countenance, dress, and work.

Your contentment in such a low level of existence is worse than the pig in the sty, satisfied with enough to eat and a bed to grunt on. He will keep himself clean, if you give him a chance, but you keep neither yourself nor anything about you clean. He is good for something when fatted, but you are a nuisance, fat or or lean, dead or alive.

But worse than this; you remind me of some great overgrown hogs I had once. I could not fatten them. Do my best they would remain lank and lean and rawboned. They had actually become too lazy and degenerate to fatten. I turned them out into the woods, and said: "There, root hog or die." They did not die, they rooted, and the very work and scanty diet gave them good digestion and condition.

## WE CANNOT LONG HIDE OUR TRUE CHARACTER.

Little things, common occurrences, passing incidents, rather than great occurrences, reveal our true character. It is in our unguarded moments that we are most likely to show what we are, not when we are on exhibition.

After all, we are but children of a larger growth; and you know how our children sometimes disappoint us when in company. "They never were half so bad at home." But, really, it is only a public exhibition of what they are, only we have failed to see it, as we should have done. We would have thought little of their outbursts of passion, or of their exhibition of consummate selfishness or obstinacy, if we had been alone with them. It is because we have not governed them on all occasions that we cannot on state occasions. So we older children may be very naughty in private, and even toward our own family, and we hardly notice it; but when, by some unfortunate and unforeseen occurrence, we expose our foolish whims, our obnoxious habits, or some nursed weakness in public, or before special friends, or when we have some special motive to appear to good advantage—if then we disappoint ourselves and others, and spoil our best laid plans, we are mortified. But these are only outbursts of hidden evil. If we were careful not to show these bad tempers and motives in private, and, still better, if we did not have them to show, we should not have to *try* to hide them in public.

We must really be what we would appear to be; for, with few exceptions, what we appear to be is really what we are; and these exceptions are what play havoc with us; we try to play the hypocrite and fail, and this just when we would appear at our best. What we are shows out without our willing. It is spontaneous. It stamps itself on our very countenance; it paints every feature; it is seen in the very eyes. Without a word or an act our mood and motion reveal us; our very atmosphere—our unconscious influence—is sure to be felt by those about us.

Secret faults and evil habits, nourished wrongs and criminal weaknesses, cannot always be hidden. They will crop out somewhere, somehow, at some time; and they often peep out and grin

just when we least suspect, and when we most would not have them.

We had better rid ourselves of what we are ashamed of. If we do not, they will not only shame us, but they will grow. They will grow so big and so strong as to enslave us, and they will grow so homely and so repulsive they will shame and repel our best friends and bring us to ruin.

Let us remember, whatever our theology is, we make our own hell or heaven by what we are, and that what we are is the aggregate of little things. Even faith will not bring grace when grace does not bring lovableness and purity.

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There is something grand in noble, intelligent, high-minded dignity. What a glow it gives to character! What substantiality and solid worth! It is character itself stamped on head, heart and life. In public assemblies, or in private walks; on occasion of state and eclat, or around the family board; in oratory, or in social converse—if it is simple, not ostentatious; genuine, not a cloak; unconscious, not a display—an effusion, a perfume, an unobtrusive grace, not perfunctory, how good it is. It is admired in the old and in the young, in the ignorant and in the learned, in the official and in the subject; it is fitted to poverty and wealth, to disgrace or applause, to our best clothes or our poorest; it is winning when of necessity on exhibition, or in the most private sphere; when roused to passion or smiling in calmness; in love's wooing or business exigencies, ah! it is a sweet fragrance, a benign influence, an effectual way to the heart, anywhere, everywhere.

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It is the courageous who succeed. The faint-hearted never devise great things, nor have they the strength to execute them. There is always a lion in the way.

The resources of most of us lie dormant. We pass through the world as pygmies when we might be giants. Let us shake ourselves of this lethargy and walk forth into the arena of life with

the courage of men. If thrown, let us rise again; if conquered, let us learn our lesson better, and at it with increased courage and tact. It is wrestling with our superiors that gives us strength and dexterity. It is attacking the impossible that makes it possible. It is venturing beyond our depth that makes us good swimmers.

What poor, weak mortals we are without courage, and foolish as we are weak, and blundering as foolish. But the courageous—the few courageous—Gideon's three hundred out of his thirty-two thousand cowards—these can take the world. They are our leaders in every enterprise and business, and they lead because their courage has made them giants.

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#### THE PRICE OF EMINENCE.

Some of us lazy slaves to folly, indolence, and selfish pleasure seem to think that great men are made in a special mold, and grow up great because they can't help it, and that we small fry have no show. But each of us have within a slumbering genii, which, if aroused by the noise of persistent study, labor, and enthusiasm, will awake and guide the weakest of us to our proper sphere, and there so train us for, and in, and by our work, as to insure us eminence in something.

There is no royal road to eminence. We do not find it already prepared for us. Friends cannot provide it; money cannot buy it; fortuitous circumstances cannot reveal one. Each of us must cut our way through the wilderness of preparation as a lonely pioneer, by hard work, severe sacrifice and indomitable endurance and perseverance. It is a hard road to travel, but with this patience, diligence, and toil we can reach "our right eminent domain" and build a beautiful mansion for our home.

The very striving of the striving is a part of this success; for it is our work that gives us wisdom, skill, and strength, till work and difficulty make a stalwart man.

Because we have to struggle so hard and yet appear to accomplish so little, and grow so slowly, we are often discouraged, and sometimes are ready to write on ourselves *failure*, and cease the struggle. But

Better to strive and climb  
And never reach the goal,  
Than to drift along with time—  
An aimless, worthless soul.  
Aye, better to climb and fall,  
Or sow, though the yield be small,  
Than to throw away, day after day,  
And never strive at all.

No one is well disciplined till he has been thoroughly mellowed by adversity, necessity, and failure. There has never been much accomplished without suffering, sacrifice, and struggle. We gather strength by wrestling with those that block up our way; we gather wisdom by struggling with difficult problems; we gain skill by doing intricate work. For our laurels we must not look behind us, nor at our feet, but before and above us; now out of reach, but reached by growth. Development, maturity, and power do not come from repose, or wealth, or friends; mere ambition cannot grasp them. We must fight for them. If we cannot get them by our own strong arm they will be forever out of reach. The only measure of true greatness is intelligent and moral growth; only this can bring eminence, which is restful, enduring and satisfying.

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How I dislike to see children put on the stage with their pieces half learned; their teachers ought to be ashamed. This is the way much in life is done. We older children are sent on the stage of life with our pieces half learned. Should not our teachers be ashamed? We disgust our audience and disgrace ourselves by thus appearing before the lights, stammering when we ought to speak clearly, hesitating when we ought to proceed boldly, stumbling when we ought to act skilfully.

A few play their part well. My, with what applause they are received! They have been taught from their youth to do well everything they undertake. We call them prodigies; they are not. They are only what all of us might be, ought to be, would be, if we were made to know our piece thoroughly before we spoke it. These

star actors, these leaders in every walk of life, do not know everything; but what they do know, they know well, and what they do, they do well. This will lead any of us to success.

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It is not so much the quantity as the quality of our knowledge that makes us learned; it is not so much what we learn as what we digest that makes us wise; it is not so much our wisdom as our skill in using our wisdom that gives us success; and it is not so much success that brings us happiness as contentment with our success and the right use we make of it.

Knowledge and wisdom and skill and success and happiness are all such comparative terms that we may have contentment and yet progress. Kind providence blinds us to what we may be till we have profitably used what we have, and till what we have develops us, so that we can compass, and use, and enjoy what is just before us. This makes life a perpetual unfolding, an increasing joy, an ever-coming perfect day.

Therefore, let us not be too anxious for the morrow, nor for what the morrow may bring. Let us rather use and enjoy to the utmost what to-day has brought us, and thus prepare ourselves for what to-morrow has in store for us.

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Let us not boast. While there are some below us, there are many above us; and what we are is insignificant compared to what we can be. What we have done is little in comparison with what we should have done; and what we have done to weaken and dwarf and belittle ourselves is a shame. Because we are a little above many it will not do to stand aloof with the pharisee, and thank God we are not "like other men—nor even as this publican." If we take an inward view, we shall hardly have arranged our filacteries in self-complacency before we shall be smiting on our breast with the publican. It is pride that shuts our eyes to our faults and failings, and blinds us to our insignificance. Self-abasement better becomes us than egotism, the pursuit of wisdom than self-righteousness, and a pure character than hypocrisy.

## HINTS.

It is said business has no soul. If it has none it must have some way of disposing of many, for thousands are lost in its meshes. The man who does not carry his soul into his business is pretty sure to be robbed of it, and of the soul of business, and of all else he has worthy of his life energies.

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We are sorry to hear that the New York Dental School is embarrassed by disagreement between many of the teachers and the business management. Dr. G. Lenox Curtis, Professor of Oral and Facial Surgery, writes us that "of the forty-five teachers thirty-seven will not, hereafter, be associated with the school."

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Very few of us are half the men we were designed and expected to be, because our reading, our hearing and our gab are so trashy they tear down instead of building up. In reading, hearing and talking there is a great deal of elimination to be done before we become fine personalities! Hours with wise men are joys for a lifetime and longer.

\* \* \*

There are some persons who can keep busy at something in the dullest times. They hardly seem to know dull times are on them. They really seem to enjoy leisure because of the opportunity it gives them to be busy in their own way. There is no "killing time" with them. There is no yawning and sleeping, fretting and worrying because Mrs. A. or Mr. B. does not keep her or his engagement. Such persons keep busy in rain or sunshine, cold or heat, loss or gain, and even in sickness or health. They never have the blues, and are a benediction to those who have.

\* \* \*

It is a popular notion that a prominent cause of caries is eructations of acid fumes from the stomach, especially in chronic dyspeptics, and it looks reasonable that it should be so. But our observation through more than thirty years' practice has shown so many such patients with good teeth, and so many without such dyspepsia with bad teeth, that I am not sure that this acidity of the stomach has so much to do with caries as is generally supposed. I have not lost a tooth from caries since I was a young man in my teens, except two of my wisdom teeth, yet I was a terrible dyspeptic till I was thirty-five years of age.

It is very easy to be polite and affable to our pleasant, submissive and courteous patients. Let us not take any credit to ourselves till we can show quite as much gentleness, suavity and sympathy to the nervous, sensitive, and unreasonable. These hold the key to our success; at their will they can unlock to us the treasures of our prosperity. The first class will thank us, and then forget us till they have further use of our services; the second class, if pleased, will be so grateful their praise will be our best advertisement. But I forget—some dentists do not believe in advertising.

\* \* \*

It is well to be laughed at for what we are, if it will provoke us to become what we should be. Self-examination is better than self-conceit, the exposure of our follies than blindness to our faults, and seeing the difficulties of the way than a false hope. Let us willingly take the lash if it will make us smart. Let us submit to the most rigorous discipline if it will develop our powers. Let us be willing to be anything or nothing if by this means we may be something. Let us go through a dozen deaths if it will bring us into a renovated life of usefulness and success.

\* \* \*

We drew the attention of a friend the other day to a poor piece of paving, while close by was excellent paving.

"Ah," said my friend, "though that poor work was put in at a low price it is the dearest both for the paver and the owner." The man who put down that poor paving said he could not afford to do good work at the price he was getting; the other workman said he could not afford to put down poor pavement at any price. At first he did less than the cheap workman but got a good price for what he did do, and now he has a good reputation, and this gives him plenty of work at a good price. The other has gone out of business. Is there not here a lesson for us?

\* \* \*

Ignorance, prejudice, and selfishness is displayed in the following short paragraph from an English journal. The fact is, England has no dental school or dental department of a school in all its realm. The best it has so far done is to give instruction to its students in some of its medical hospitals, and it is still tied to its mother's apron strings. Does this account for its jealousy of our schools and of our wonderful progress in the dental profession? Read this paragraph:

In the list of foreign dentists the names of twenty-seven practitioners appear who hold diplomas from either the University of Harvard or the University of Michigan; but by a recent decision of the Medical Council the

qualifications granted by these American licensing authorities are not at present registrable. We hope that it will be a long time before they are. Some specimens of American dentists which have come within our notice were not particularly desirable men to mix with; and we are sure that some of them are not fit and proper persons to be admitted to any respectable society.

\* \* \*

The fact that some special work will not pay in its immediate results is not always an evidence that it should not be done. Perhaps the patient cannot afford to pay a good price, or he cannot appreciate such work till it is done, or has been worn for a time; or it may be it is above your present sphere of practice, or above what the community is accustomed to. But if you can do it well, do it; if you cannot, learn to do it well. Do it though it may be money out of pocket. It will pay if it only demonstrates that you are a master workman. We have done many things for the reputation they would bring us. You say this is advertising. Yes, we have done so much advertising in our day—some of it very costly—that we might well be called “an advertising dentist.” But our chief success in advertising has been in doing the very best work we could possibly do; and in doing as much as possible do a kind other dentist could not do, or do as well as we could. We were determined our work should be our best advertisement, and our patients our best advertisers.

\* \* \*

To attain excellence we must prefer criticism to flattery, struggle to ease, and hardship to downy pillows. The crucible, with all its fiery ordeal, is better than failure. Rough handling and rasping and pounding, and any process that gives manly form and polish, and preparation for usefulness and an honorable place, is better than to be a thing of uselessness and neglect.

The gold in the mine does not look particularly valuable. The ingot from the crucible does not seem much improved. As the goldsmith pounds it, and ever and anon puts it in the fire to soften its refractory character, it is still unsightly. But leave him alone awhile and go again, and he will show you what patience, labor, and skill has wrought. We cannot be made in a day, nor perfected without much intelligent labor. And at best, and at last, all this refining and forging and tempering, and skilful handling and shaping, produces what is out of place in the workshop. It is transferred to the beautiful mansion for which it was prepared. We are no sooner perfected than the King calls for us. We are for use in a beautiful mansion.

It does us good to have hard fare betimes—to have it “difficult to make both ends meet”—to find even a willingness to work bring little results. A bare cupboard and idle hands make us think, and think hard, till extremity becomes a good school. We can now remember many an opening we carelessly missed or wantonly neglected, the profits of which could now be appreciated; many a foolish spending and costly luxury that we would have been better without; many ways we have spent our money, or neglected to make it, that now we are heartily ashamed of. If we thus take account of stock, and, as we balance our books, notice these many foolish and expensive debtments against us, and the many small credits that ought to be fat, we may be able to start out with better habits, stricter economy and greater industry and enthusiasm. It is often not because we earn but little that keeps us poor but because we spend needlessly.

\* \* \*

Independence, decision, and positiveness are commendable qualities. But independence must be without stiffness; decision without bluntness, and positiveness without austerity. If independence is coupled with suavity, decision with congeniality, and positiveness with conservativeness, then stiffness is only dignity, bluntness is only unvarnished truthfulness, and austerity is only unswerving manliness. To make all these grand and useful, this independence, decision, and positiveness; this suavity, congeniality, and conservatism; this honor, truthfulness, and manliness must be not only inherent, but outflowing; not only shining as ornaments, but aggressive stimulants; not only transforming our own lives, but transforming society. This means that it must make of us what Christ said John was, “a burning and a-shining light”—fire burning up evil and lighting up the world.

\* \* \*

“When the young eagles are large enough to care for themselves, the mother eagle,” Moses says, “stirreth up her nest, fluttereth over her young, spreadeth abroad her wings, taketh them on her pinions, and flyeth away.” But she does not take them to a place of plenty or safety, but in mid air shakes them off that they may the better learn to fly, and in their hunger learn to fight for prey. Children that are forever kept in the parent nest are seldom of much consequence. God reminded the Israelites that when they were children in capacity and development, “Ye have seen how I bear you on eagle’s wings.” But when He had brought them to Canaan He told them to go in and make homes for themselves; and when they still acted like children He punished them for their childish cowardice.

## FOR OUR PATIENTS.

### OBSERVE.

Some men are wise in their books and fools in the usual transactions of life. In their studies they are profound; in their daily walks they stumble over gold and precious stones. They are wonderfully clear and accurate in the explanation of scientific truths, but show no aptness in improving the common opportunities of life. They lack observation.

This is the reason many of our wisest men are poor, and so awkward and blundering in doing and seeing the simple things about them that they are the laughing-stock of many shrewder workmen too ignorant to write their names. This, too, is the reason some of the best writers and speakers in our profession are poorer workmen than some who can hardly put a dozen sentences together correctly. They lack close, careful, accurate observation.

Some time since we were passing through the beautiful Washington Park, in company with a young lady and a professor of some eminence. Conversation turned on little things, and the young lady, with a twinkle in her eye, asked the professor why the beautiful shade tree just at our left was called a horse chestnut.

"This English name," said he, "is the translation of its Latin name, *Esclus Hippocastanum*, because its nuts were formerly fed to horses."

"Now, professor," said the young lady, "I think I have a better reason than that. Horses have not changed in their nature and tastes, and certainly you cannot get a horse to eat a horse chestnut now. I believe I discovered the reason in examining one of the branches the other day, for I found the imprint of a horse's foot on every twig—shoe, nails, frog, and all—and they were so regular in their spaces that you could imagine some tiny horse had walked along its whole length."

"Ridiculous!" said the professor. "Your imagination must have been girlishly wrought up."

But breaking a branch, she showed him the wonderful characteristic, and, with astonishment, he was obliged to admit the fact. Approaching the botanic garden, she said:

"And now, professor, tell me from whence these passion flowers derive their name?"

"I must not allow my pretty miss to catch me again. But, really, I cannot remember its official name, and certainly I do not know any vulgar reason for it."

"Do you not believe I can show you in the very flower a representation of our Savior and his twelve Apostles, associated as in the sad day of His passion?"

"No; I do not believe it possible, any more than you can convince me of that old woman's whim that in the common pansy you can show me a mother on a chair, her daughters on two chairs, and her daughters-in-law with more to sit on."

"I will show you that both are facts."

And so she did. And her close observation of little things gave him many other surprises before we were through with our walk. They were very interesting things his books had never taught him.

We have seen professors in our dental colleges (though, of course, such professors are rare) who can talk on many technical stock questions, much more readily than on some simple subject that is familiar to any observant student.

A teacher in chemistry was descanting on tartar, describing its source and characteristics:

"It comes from the salivary glands, and—"

"But where did the glands get it?" queried an inquisitive student.

"Oh, it is secreted from the blood."

"And from where did the blood get it?"

"Of course, from the food and water; hard water contains large quantities of these alkaline salts."

"Then I suppose it is the acidity of the mouth that precipitates the tartar from the saliva?"

"Yes."

"Then if acid is thrown in hard water that would precipitate the lime?"

"Yes."

"But my mother throws in an alkali to precipitate it. Vinegar would be of no use."

That was going beyond the books, and the professor was nonplussed.

"We all know, said the professor, "that it is the acid of the mouth that dissolves the zinc cements, and—"

"Beg pardon," said the student. "I have had a ball in strong acid for two weeks, and it is as hard and smooth as when put in it."

The reasons for sensitive teeth, for softened dentine, and for the various forms of caries, are much better solved by close, systematic observations than by learned disquisitions.

By all means study books, hear lectures, and learn from conversation; but, above all, observe.

## MICROBES.

By and by we shall scarcely dare to move or breathe, much less to eat, because of the discoveries of science of the danger which lies in every contact with the outside world. Invisible disease germs are everywhere lying in wait for us, ready to enter our system by the mouth or nose or through the skin, and capable of multiplying themselves with miraculous rapidity, and of destroying health and even life in defiance of all the appliances of medical art.

We long ago learned that it was dangerous to eat meat or to drink water, lest in doing so we should swallow death dealing microbes. Then we were taught that street-sweeping skirts were disease traps of the most efficient kind, and that flies crawling over our food were very likely to inoculate it with bacteria gathered from the swill pail. We have also been carefully warned that it is very dangerous to handle money, seeing that we know not through whose hands it may have passed. And now we learn from a news item that it is practically impossible to travel in a public conveyance without facing death through disease in a variety of forms.

The marvel is that we did not all die long ago; or, rather, that the human race did not become extinct long before it had advanced far enough in scientific research to discover the dangers to which it was constantly exposed. But that marvel is fully explained by the anatomist, who tells us that the human body is provided with various appliances for self-defense against these swarms of bacteria, before whose terrible onslaught our race must otherwise have disappeared long ago from the face of the earth.

This defensive armor which nature has provided, if kept in proper order, works like a charm, destroying the hurtful microbes or hindering them from doing injury. A healthy man is, therefore, almost disease proof as long as he keeps himself in good condition.

The moral to all this is that a man who would escape infection must not rely on watchfulness against this or that particular disease, or against particular means of contracting disease, but must take care to keep his whole body in a healthy condition by sleeping and eating, living and working in a proper manner.

A lazy man; a man who does not take enough sleep; a man who exposes himself to sudden chills; a man who eats too fast, or who gratifies his palate at the expense of his digestive organs; a man who does not take care to keep himself and his surroundings clean, and to get an abundant supply of fresh air, or a man who accustoms himself to the use of alcohol or tobacco, or any other hurtful drug—the man who does any of these things weakens the defenses against disease.

*Exchange.*